reference guide

hp StorageWorks CLI reference guide for directors and edge switches

Product Version: FW V05.01.00-24/HAFM SW V07.01.00-09

Fourth Edition (June 2003)

Part Number: AA-RQ7AD-TE

This guide covers the essentials of using a command line interface (CLI) to manage HP StorageWorks directors and edge switches. It also includes all current CLI commands and specifies their syntax, purpose, and parameters.

© Copyright 2001-2003 Hewlett-Packard Development Company, L.P.

Hewlett-Packard Company makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

This document contains proprietary information, which is protected by copyright. No part of this document may be photocopied, reproduced, or translated into another language without the prior written consent of Hewlett-Packard. The information contained in this document is subject to change without notice.

Hewlett-Packard Company shall not be liable for technical or editorial errors or omissions contained herein. The information is provided "as is" without warranty of any kind and is subject to change without notice. The warranties for Hewlett-Packard Company products are set forth in the express limited warranty statements for such products. Nothing herein should be construed as constituting an additional warranty.

Printed in the U.S.A.

CLI Reference Guide for Directors and Edge Switches
Fourth Edition (June 2003)
Part Number: AA-RQ7AD-TE

contents

About this Guide 9
Overview 10
Intended Audience 10
Related Documentation 10
Conventions 11
Document Conventions 11
Text Symbols 11
Equipment Symbols 12
Rack Stability 13
Getting Help 14
HP Technical Support 14
HP Storage Website 14
HP Authorized Reseller 15

1 Introduction 17
Command Line Interface Overview 18
Entering Command Line Interface Commands 19
Documentation Conventions 19
Navigation Conventions 19
Command Tree 20
Navigation of the CLI Command Tree 25
Limitation on Movements 26
Parameters 27
Output 27
Logging In and Logging Out 28
User Access Rights 28
login 29
commaDelim 31
Handling Command Line Interface Errors 32
Using the Command Line Interface Help 33

Adding Comments to Scripts 34
Telnet Session 35
Ethernet Connection Loss 35

2 CLI Commands 37
Command Overview 37
config Commands 38
config.enterpriseFabMode.setState 39
config.features.enterpriseFabMode 40
config.features.ficonms 41
config.features.installKey 42
config.features.OpenSysMS 43
config.features.opentrunking 44
config.features.show 45
config.ficonms.setState 47
config.ip.ethernet 48
config.ip.show 49
config.openSysMS.setState 50
config.port.blocked 51
config.port.extDist 52
config.port.fan 53
config.port.name 54
config.port.show 55
config.port.speed 57
config.port.type 59
config.security.fabricBinding Commands 61
config.security.fabricBinding.activatePending 62
config.security.fabricBinding.addMember 63
config.security.fabricBinding.clearMemList 64
config.security.fabricBinding.deleteMember 65
config.security.fabricBinding.replacePending 66
config.security.fabricBinding.setState 67
config.security.fabricBinding.showActive 69
config.security.fabricBinding.showPending 70
config.security.portBinding Commands 71
config.security.portBinding.bound 72
config.security.portBinding.wwn 74
config.security.portBinding.show 76

config.security.switchBinding Commands 78
config.security.switchBinding.addMember 79
config.security.switchBinding.deleteMember 80
config.security.switchBinding.setState 81
config.security.switchBinding.show 83
config.security.userRights Commands 84
config.security.userRights.administrator 85
config.security.userRights.operator 86
config.security.userRights.show 87
config.snmp.addCommunity 88
config.snmp.authTraps 89
config.snmp.deleteCommunity 90
config.snmp.show 91
config.switch Commands 93
config.switch.bbCredit 94
config.switch.domainRSCN 95
config.switch.insistDomainId 96
config.switch.edTOV 97
config.switch.interopMode 98
config.switch.prefDomainId 99
config.switch.priority 100
config.switch.raTOV 102
config.switch.rerouteDelay 103
config.switch.speed 105
config.switch.show 106
config.switch.zoningRSCN 108
config.system.contact 109
config.system.date 110
config.system.description 111
config.system.location 112
config.system.name 113
config.system.show 114
config.zoning Commands 115
config.zoning.setDefZoneState 116
config.zoning.activateZoneSet 117
config.zoning.deactivateZoneSet 118
config.zoning.replaceZoneSet 119
config.zoning.clearZoneSet 120

config.zoning.addZone 121
config.zoning.deleteZone 122
config.zoning.renameZoneSet 123
config.zoning.addWwnMem 124
config.zoning.addPortMem 125
config.zoning.clearZone 127
config.zoning.deleteWwnMem 128
config.zoning.deletePortMem 129
config.zoning.renameZone 130
config.zoning.showPending. 131
config.zoning.showActive 132
maint Commands 133
maint.port.beacon 134
maint.port.reset 135
maint.system.beacon 136
maint.system.clearSysError 137
maint.system.ipl. 138
maint.system.resetConfig 139
maint.system.setOnlineState 140
perf Commands. 141
perf.class2 142
perf.class3 144
perf.clearStats 146
perf.errors 147
perf.link 149
perf.openTrunking.backPressure 151
perf.openTrunking.congestionThresh 152
perf.openTrunking.creditStarvThresh 153
perf.opentrunking.setState 154
perf.openTrunking.show 155
perf.openTrunking.unresCongestion 157
perf.thresholdAlerts Commands 158
perf.thresholdAlerts.counter.addAlert 161
perf.thresholdAlerts.counter.addPort. 162
perf.thresholdAlerts.counter.deleteAlert 164
perf.thresholdAlerts.counter.removePort 165
perf.thresholdAlerts.counter.setCounter 166
perf.thresholdAlerts.counter.setParams 167

perf.thresholdAlerts.counter.show . . . 169
perf.ThreshAlerts.counter.showStatisticTable . . . 170
perf.thresholdAlerts.setState . . . 171
perf.traffic . . . 172
show Commands . . . 174
show.eventLog . . . 175
show.features . . . 177
show.frus . . . 179
show.ip.ethernet . . . 181
show.loginServer . . . 182
show.nameServer . . . 184
show.nameServerExt . . . 186
show.openTrunking.config . . . 188
show.openTrunking.reroutelog . . . 190
show.port.config . . . 192
show.port.info . . . 194
show.port.nodes . . . 196
show.port.status . . . 198
show.port.technology . . . 202
show.security.fabricBinding . . . 204
show.security.portBinding . . . 205
show.security.switchBinding . . . 207
show.switch . . . 208
show.system . . . 211
show.thresholdAlerts.alert . . . 213
show.thresholdAlerts.log . . . 215
show.zoning . . . 217

A Error Messages . . . 219

Index . . . 245

Tables

1 Document Conventions . . . 11
2 CLI Command Tree Navigation Conventions . . . 19
3 CLI Command Tree . . . 20
4 List of Threshold Alert Counters . . . 158
5 CLI Error Messages . . . 219

about this guide

This reference guide provides information to help you:

- Use the command line interface.
- Obtain information about specific commands when needed.

About this Guide topics include:

- Overview, page 10
- Conventions, page 11
- Rack Stability, page 13
- Getting Help, page 14

Overview

This section covers the following topics:

- Intended Audience
- Related Documentation

Intended Audience

This book is intended for use by data center administrators, system administrators, and customer support personnel who are experienced with the following:

- Concepts of networking, storage area network, and zoning.
- HP products included in the user's network.
- Establishing and using a Telnet session.
- Using a terminal command line.

Related Documentation

For a list of corresponding documentation, see the Related Documents section of the Release Notes that came with this product.

For the latest information, documentation, and firmware releases, please visit the following StorageWorks website:

http://h18006.www1.hp.com/storage/saninfrastructure.html

For information about Fibre Channel Standards, visit the Fibre Channel Industry Association website, located at http://www.fibrechannel.org.

Conventions

Conventions consist of the following:

- Document Conventions
- Text Symbols
- Equipment Symbols

Document Conventions

The document conventions included in Table 1 apply in most cases.

Table 1: Document Conventions

Element	Convention
Cross-reference links	Blue text: Figure 1
Key and field names, menu items, buttons, and dialog box titles	**Bold**
File names, application names, and text emphasis	*Italics*
User input, command and directory names, and system responses (output and messages)	`Monospace font` `COMMAND NAMES` are uppercase monospace font unless they are case sensitive
Variables	*`<monospace, italic font>`*
Website addresses	Blue, underlined sans serif font text: http://www.hp.com

Text Symbols

The following symbols may be found in the text of this guide. They have the following meanings.

WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or death.

Caution: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

Note: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Equipment Symbols

The following equipment symbols may be found on hardware for which this guide pertains. They have the following meanings.

Any enclosed surface or area of the equipment marked with these symbols indicates the presence of electrical shock hazards. Enclosed area contains no operator serviceable parts.

WARNING: To reduce the risk of personal injury from electrical shock hazards, do not open this enclosure.

Any RJ-45 receptacle marked with these symbols indicates a network interface connection.

WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.

Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. Contact with this surface could result in injury.

WARNING: To reduce the risk of personal injury from a hot component, allow the surface to cool before touching.

Power supplies or systems marked with these symbols indicate the presence of multiple sources of power.

WARNING: To reduce the risk of personal injury from electrical shock, remove all power cords to completely disconnect power from the power supplies and systems.

Any product or assembly marked with these symbols indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manually handling material.

Rack Stability

Rack stability protects personnel and equipment.

WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- In single rack installations, the stabilizing feet are attached to the rack.
- In multiple rack installations, the racks are coupled.
- Only one rack component is extended at any time. A rack may become unstable if more than one rack component is extended for any reason.

Getting Help

If you still have a question after reading this guide, contact an HP authorized service provider or access our website: http://www.hp.com.

HP Technical Support

In North America, call technical support at 1-800-652-6672, available 24 hours a day, 7 days a week.

Note: For continuous quality improvement, calls may be recorded or monitored.

Outside North America, call technical support at the nearest location. Telephone numbers for worldwide technical support are listed on the HP website under support: http://www.hp.com/country/us/eng/support.html.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP Storage Website

The HP website has the latest information on this product, as well as the latest drivers. Access storage at: http://www.hp.com/country/us/eng/prodserv/storage.html. From this website, select the appropriate product or solution.

HP Authorized Reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the HP website for locations and telephone numbers: http://www.hp.com.

Introduction

1

This chapter introduces the command line interface (CLI) and describes the essentials for using CLI commands. It includes the following topics:

- Command Line Interface Overview, page 18
- Entering Command Line Interface Commands, page 19
- Logging In and Logging Out, page 28
- Handling Command Line Interface Errors, page 32
- Using the Command Line Interface Help, page 33
- Adding Comments to Scripts, page 34
- Telnet Session, page 35

Command Line Interface Overview

The Command Line Interface (CLI) is a feature that provides an alternative to the HP High Availability Fabric Manger (HAFM) and Embedded Web Server (EWS) interface products for director and switch management capabilities.

The CLI can only be used through a Telnet client session in an out-of-band management environment, using the Ethernet port in the director or edge switch. Although the primary use of the CLI is in host-based scripting environments, the CLI commands can also be entered directly at a command line. Any hardware platform that supports the Telnet client software can be used.

The purpose of the CLI is to automate management of a large number of directors and edge switches through scripts. Although the primary use of the CLI is in host-based scripting environments, CLI commands can also be entered directly at a command line.

Because the CLI is not an interactive interface, no prompts are displayed to guide the user through a task. If an interactive interface is needed, the *HAFM* application or *EWS* application should be used instead of the CLI.

Entering Command Line Interface Commands

CLI commands can be entered directly at the command line of a workstation or coded in a script. CLI commands are not case sensitive.

Documentation Conventions

Throughout this publication, periods are used to separate components of a command name. However, periods cannot be included when the command is actually entered at a workstation or coded in a script. How to enter commands is explained in "Navigation of the CLI Command Tree" on page 25. Even though commands cannot be entered with periods, command line prompts do include periods as shown below:

```
Config.Port>
```

Navigation Conventions

Basic command line navigation conventions are supported. The following table includes asynchronous commands recognized by the CLI.

Table 2: CLI Command Tree Navigation Conventions

Character Sequence	Common Name	Action or Description
<CR>	Carriage Return	Pass a completed line to the parser.
<DEL>	Delete	Backspace one character and delete the character.
<NL>	New Line	Pass a completed line to the parser.
<SP>	Space	Used to separate keywords.
#	Pound Sign	Used to designate comments in a script.
?	Question Mark	Provide help information.
"	Quotation Mark	Used to surround a single token.
^A	Control-A	Position the cursor to the start of the line.
^B	Control-B	Position the cursor left one character.
^D	Control-D	Delete the current character.
^E	Control-E	Position the cursor to the end of the line.
^F	Control-F	Position the cursor right one character.

Table 2: CLI Command Tree Navigation Conventions (Continued)

Character Sequence	Common Name	Action or Description
^H	Control-H	Backspace one character and delete the character.
^I	Tab	Complete the current keyword.
^K	Control-K	Delete to the end of the line.
^L	Control-L	Redraw the line.
^N	Control-N	Move down one line in the command history.
^P	Control-P	Move up one line in the command history.
^R	Control-R	Redraw the line.
^U	Control-U	Clear the input and reset the line buffer.
^X	Control-X	Clear the input and reset the line buffer.
<ESC>[A	Up Arrow	Move up one line in the command history.
<ESC>[B	Down Arrow	Move down one line in the command history.
<ESC>[C	Right Arrow	Position the cursor right one character.
<ESC>[D	Left Arrow	Position the cursor left one character.

Command Tree

The command tree of the CLI begins from the root. The commands in the four extended branches (`config`, `maint`, `perf`, and `show`) are described in Chapter 2.

There are three additional commands (`login`, `logout`, and `commaDelim`) that are globally available. These commands are described in this chapter. The hierarchy from the root, reading from left to right, is listed in Table 3

Table 3: CLI Command Tree

config ----------	enterpriseFabMode	setState	
	features ----------	installKey	
		enterpriseFabMode	
		ficonms	
		OpenSysMS	
		opentrunkingState	

Table 3: CLI Command Tree (Continued)

		show	
	ficonms	setState	
	ip ----------	ethernet	
		show	
	port ----------	blocked	
		extDist	
		fan	
		name	
		speed	
		show	
		type	
	openSysMS	setState	
	security ----------	fabricBinding ------	activatePending
			addMember
			clearMemList
			deleteMember
			replacePending
			setState
			showActive
			showPending
	security ----------	portBinding -------	bound
			wwn
			show
		switchBinding -----	addMember
			deleteMember
			setState
			show
		userRights --------	administrator
			operator
			show

Table 3: CLI Command Tree (Continued)

	snmp ----------	addCommunity	
		authTraps	
		deleteCommunity	
		show	
	switch ----------	bbCredit	
		domainRSCN	
		edTOV	
		insistDomainId	
		interopMode	
		prefDomainId	
		priority	
		raTOV	
		rerouteDelay	
		speed	
		show	
		zoningRSCN	
	system ----------	contact	
		date	
		description	
		location	
		name	
		show	
	zoning ----------	setDefZoneState	
		activateZoneSet	
		deactivateZoneSet	
		replaceZoneSet	
		clearZoneSet	
		addZone	
		deleteZone	
		renameZoneSet	

Table 3: CLI Command Tree (Continued)

		addWwnMem	
		addPortMem	
		clearZone	
		deleteWwnMem	
		deletePortMem	
		renameZone	
		showPending	
		showActive	
maint ----------	port ----------	beacon	
		reset	
	system ----------	beacon	
		clearSysError	
		ipl	
		resetConfig	
		setOnlineState	
perf ----------	class2		
	class3		
	clearStats		
	errors		
	link		
	openTrunking	backPressure	
		congestionThresh	
		creditStarvThresh	
		setState	
		show	
		unresCongestion	
	thresholdAlerts	setState	
		deleteAlert	
		counter	addAlert
			addPort

Table 3: CLI Command Tree (Continued)

			deleteAlert
			removePort
			setCounter
			setParams
			show
	traffic		
show ----------	eventLog		
	features		
	frus		
	ip ----------	ethernet	
	loginServer		
	nameServer		
	nameServerExt		
	openTrunking	config	
		reroutelog	
	port ----------	config	
		info	
		nodes	
		status	
		technology	
	security ----------	fabricBinding	
		portBinding	
		switchBinding	
	switch		
	system		
	thresholdAlerts	alerts	
		log	
	zoning		

Commands are shown, with the exception of the zoning commands, in alphabetical order to make them easier to locate. Although the commands can be entered in any order, depending on the results desired, the order shown in Table 3 on page 20 for the zoning commands is a typical order in which the zoning commands are entered.

Note that the order in which commands are entered determines the order in which the `show` commands display the values. Refer to Chapter 2 for examples of `show` commands output.

Navigation of the CLI Command Tree

Once the administrator or operator logs in and receives the `Root>` prompt, the CLI commands are accessed by navigating up and down the CLI command tree.

To move from the root through the any of the four extended branches, enter the name of the next branch as shown in Table 3 on page 20. For example, to use the `config.port.name` command to configure the name for port 4 on the edge switch, this series of commands is entered:

```
Root> config
Config> port
Config.Port> name 4 "HP Tape Drive"
```

At this point, to enter the `maint.port.beacon` command to set the beaconing state of port 4, the following series of commands is entered:

```
Config.Port> ..
Config> ..
Root> maint
Maint> port
Maint.Port> beacon 4 true
```

Note: You must return all the way to the root of the tree to transition to another extended branch. When traversing back to the root, the name of each branch cannot be used. Instead use the double-dot command (two periods) to move back towards the root. Only one double-dot command may be entered at a time.

One approach to making the navigation more concise is to use the `root` command to jump directly to the root of the CLI command tree. The previous example, which shows stepping back to the root with the double-dot command, is simplified as follows:

```
Config.Port> root
Root> maint
Maint> port
Maint.Port> beacon 4 true
```

Another approach to making the navigation more concise is to use the complete command syntax from the `Root>` prompt each time. For example, to issue the `config.port.name` command and then the `maint.port.beacon` command, the commands are entered as follows:

```
Root> config port name 4 "HP Tape Drive"
Root> maint port beacon 4 true
```

As shown in this example, use of the complete command syntax avoids navigating up and down the branches of the CLI command tree, and the prompt stays at the root. The use of complete command syntax is particularly useful when writing scripts.

When coding a script, remember to code the appropriate character sequences, which are described in "Navigation Conventions" on page 19.

```
Root> config port name 4 "HP Tape Drive"<CR>
Root> maint port beacon 4 true<CR>
```

Limitation on Movements

As the commands are entered, they are recorded in a history log. The limitations on movement that result from use of the history log are:

- If a command has more than 60 characters, the command runs, but the command is not recorded in the history log, and the position in the tree does not change, as shown in the following example. Because the command is not recorded in the history, a subsequent asynchronous command (navigation command) cannot depend on it.

  ```
  Root> config zoning addWwnMem TheUltimateZone
  10:00:00:00:C9:22:9B:64
  Root>
  ```

- Whenever the position in the CLI command tree moves to a new branch (for example, `config` to `maint`, `config` to `config.port`, or `config.port` to `config`), the history log is cleared. In this case, any asynchronous commands (for example, the up-arrow command `<ESC>[A` or the up-arrow keyboard symbol) cannot move the position back towards the root, as shown in this example:

```
Root> config
Root.Config> port
Root.Config.Port> <ESC>[A
Root.Config.Port>
```

Parameters

Some command parameters accept character strings that include spaces. Quotation marks are required when a string includes spaces.

```
Config.System> location Building_24_Room_16
Config.System> location "Building 24 Room 16"
```

If spaces are not included in a parameter that accepts a string, the quotation marks are not required around that string.

To include quotation marks in a string, use the escape character (\) before the quotation marks.

```
Config.System> location "Building 24 \"HP Lab\""
```

A null string can be created by using the quotation marks without any space between them.

```
Config.System> location ""
```

Output

All output from the CLI commands is limited to the standard 80 columns supported by most Telnet interfaces. The output is left-justified.

Logging In and Logging Out

The CLI allows a single Telnet client to be connected to a director or edge switch. If a Telnet client logs out, or if after 15 minutes of inactivity the client's access times out, another Telnet client may log in. Also note that the Telnet client (user) must log in any time a director or edge switch is restarted because the current user's access is lost. Examples of a restart include an IPL and any power-off situation.

User Access Rights

The CLI supports two user access rights: administrator and operator. A user who logs in with administrator access rights can use all of the commands described in this publication. However, operator access rights grant permission to use only the `perf` and `show` branches of the CLI command tree (for example, the `perf.traffic` and `show.system` commands), as well as the globally available commands (`login`, `logout`, and `commaDelim`) described in the following section.

login

Syntax

```
login
```

Purpose

This command allows a Telnet client to connect to a director or edge switch.

Description

This command allows the user to log in with either administrator or operator access rights. The default password is *password*. The `login` command is called automatically by the CLI each time a new Telnet session is activated, as well as each time new administrator access rights are configured.

After the `login` command is issued, the `Username:` prompt automatically displays. After a valid user name is entered, the `Password:` prompt automatically displays. After the corresponding valid password is entered, the `Root>` prompt displays. At this prompt the user may enter any of the commands included in Table 3 on page 20.

A user name and password can be set by the administrator through the `config.security.userRights.administrator` command or through the `config.security.userRights.operator` command.

The access rights chosen for the CLI are completely independent of the other product interfaces, for example, SNMP or Hewlett-Packard (HP) product interfaces.

Parameters

This command has no parameters.

Command Examples

```
login
Username: Administrator
Password: password

login
Username: Operator
Password: password
```

logout

Syntax

```
logout
```

Purpose

This command allows a Telnet client to disconnect from a director or edge switch.

Description

This command logs out the single Telnet client connected to a director or edge switch. This command can be entered at any point in the command tree.

Parameters

This command has no parameters.

Command Examples

```
Root> logout
Config> logout
Config.Port> logout
```

commaDelim

Note: The output examples shown in the other sections of this publication presume that `commaDelim` is off.

Syntax

```
commaDelim enable
```

Purpose

This command enables the user to obtain displayed information (from a `show` command) in comma-delimited, rather than tabular, format. The default format is tabular.

Description

This command can be entered at any point in the command tree.

Parameter

This command has one parameter:

`enable`

Specifies the comma-delineated state for output. Valid values are *true* and *false*. Boolean 1 and 0 may be substituted as values.

Command Examples

```
Root> commaDelim true
Config> commaDelim 1
Config.Port> commaDelim false
```

Output Example

Output displayed in `commaDelim` mode follows.

```
Root> show eventLog

Date/Time,Code,Severity,FRU,Event Data,
04/12/01 10:58A,375,Major,CTP-0,00010203 04050607 08090A0B
0C0D0E0F,
04/12/01 10:58A,375,Major,CTP-0,00010203 04050607 08090A0B
0C0D0E0F,
04/12/01 9:58A,385,Severe,CTP-0,00010203 04050607 08090A0B
0C0D0E0F,
04/11/01 7:18P,395,Severe,CTP-0,00010203 04050607 08090A0B
0C0D0E0F,
```

Handling Command Line Interface Errors

Two types of errors detected by the CLI are:

- An error associated with the interface. For example, a keyword is misspelled or does not exist.

  ```
  Root> confg

  Error 234: Invalid Command
  ```

- An error associated with a fabric, director, or edge switch. For example, a parameter error is detected by a switch, where port 24 is entered for a switch that supports only 16 ports.

  ```
  Root> config port name 24 "Port 24"

  Error 248: Invalid Port Number
  ```

In either case, the command is ignored. The CLI remains at the point it was before the command was entered. The error messages, including error number and error, are listed in Appendix A.

Using the Command Line Interface Help

The question mark (?) can be used within a command to obtain certain information:

- If the question mark is used in place of a command keyword, all the keywords at that level of the CLI command tree display.

```
Root> config system ?
Command identified
contact           - Set the system contact attribute
date              - Set the system date and time
description       - Set the system description attribute
location          - Set the system location attribute
name              - Set the system name attribute
show              - Display the system configuration
```

- If the question mark is used at the end of a recognized command, any parameters for that command display.

```
Root> config port name ?
                  - name <portNumber> <portName>
```

- If the question mark is used after one or more characters of a keyword, any keywords at that level of the CLI command tree display.

```
Root> config s?
security snmp switch system
```

Adding Comments to Scripts

The pound sign (#) can be used to add comments in a script file. The pound sign must be the first character in the line; the CLI ignores everything after the pound sign in that line. The following lines are valid:

```
Root> #Change port 3 to an E_Port<CR>
Root> config port<CR>
config.port> ##################<CR>
config.port> ## Begin Script ##<CR>
config.port> ##################<CR>
```

The pound sign cannot be used after any other characters (a command, for example) to start a comment. The following is an invalid script line:

```
Root> maint system beacon true # Turn on beaconing<CR>
```

To correct the previous script line, move the comment either before or after the line with the command. For example, the following examples are both valid:

```
Root> # Turn on beaconing<CR>
Root> maint system beacon true<CR>
```

or

```
Root> maint system beacon true<CR>
Root> # Turn on beaconing<CR>
```

Note: Comments of over 200 characters in length may cause unpredictable system behavior. Limit comments to 200 characters per line.

Telnet Session

The CLI can only be used through a Telnet client session in an out-of-band management environment, using the Ethernet port in a director or edge switch. Although the primary use of the CLI is in host-based scripting environments, the CLI commands can also be entered directly at a command line. Any hardware platform that supports the Telnet client software can be used.

Note: If you have the *HAFM* application, use the **Configure** option in the software to enable Telnet access before attempting to establish a Telnet client session. You can also enable Telnet access by using the **Configure** option of the Embedded Web Server (EWS).Telnet access is enabled by default. Any changes to the enabled state of the Telnet server are retained through system resets and power cycles.

Ethernet Connection Loss

If the Ethernet cable is disconnected from a director or edge switch during a Telnet session, one of three scenarios is possible:

- Replace the Ethernet cable before the client connection times out, and the Telnet session will continue.
- Wait 15 minutes for the client connection times out; then replace the Ethernet cable and restart the connection.
- If the client connection has already timed out, replace the Ethernet cable. Open an *EWS* or *HAFM* application window. Toggle the enabled state of the CLI, thereby clearing the client connection. Restart the client connection.

Once the client connection is reestablished, verify your configuration's completeness and accuracy.

CLI Commands

2

This chapter describes command line interface (CLI) commands, including their syntax, purpose, and parameters, as well as examples of their usage and any output that they generate. It includes the following topics:

- Command Overview, page 37
- config Commands, page 38
- maint Commands, page 133
- perf Commands, page 141
- show Commands, page 174

Command Overview

Most of the commands in this chapter are listed in alphabetical order to make them easy to locate. Although the commands can be entered in any order, depending on the results desired (so long as the tree structure is followed), the order used herein for the zoning commands follows a typical order of entry. The various `show` commands are usually entered at the end of a group of other commands.

config Commands

The `config` branch of the CLI command tree contains commands that set parameter values. These values are not temporary (session) values, but are retained across power cycles. The commands in the `config` branch can by used only by the administrator.

Note that the `config.zoning` commands function in a different way from the other CLI commands, which are single action commands that take effect immediately. A zoning configuration is typically too complicated to be described by a single command, so the first zoning command entered invokes a work-area editor. The commands take effect on a temporary copy of a zone set in the work area until the temporary copy in the work area is activated to the fabric or is discarded.

Because not all the verification of the zone set can occur on the temporary copy in the work area, it is possible, however unlikely, that the copy of the zone set encounters no errors until the zone set is activated to the fabric.

In general, the `config naming` commands (except for the `config.zoning` commands) use the USASCII character set. All of the characters in this 128-character set (the first 7-bit subset of the ISO-8859-1 Latin-1 character set) are valid. Any exceptions are noted in the specific command descriptions.

config.enterpriseFabMode.setState

Syntax

```
setState enterpriseFabModeState
```

Purpose

This command sets the Enterprise Fabric Mode state for the fabric. The SANtegrity feature key must be installed to activate the Enterprise Fabric Mode state.

Parameters

This command has one parameter:

enterpriseFabModeState	Specifies whether enterpriseFabMode is active. Valid values are `activate` and `deactivate`. Boolean *1* and *0* may be substituted as values.

Command Example

```
Root> config enterpriseFabMode setState 1
```

Note: The command config.features.enterpriseFabMode on page 40 has functionality that is identical to this command.

config.features.enterpriseFabMode

Syntax

```
enterpriseFabMode enterpriseFabModeState
```

Purpose

This command sets the Enterprise Fabric mode state for the fabric. The SANtegrity feature key must be installed to activate the Enterprise Fabric mode state.

Parameters

This command has one parameter:

enterpriseFabModeState	Specifies whether enterpriseFabMode is active. Valid values are *activate* and *deactivate*. Boolean *1* and *0* may be substituted as values.

Command Example

```
Root> config features enterpriseFabMode 1
```

Note: This command has functionality that is identical to the config.enterpriseFabMode.setState command, described on page 39.

config.features.ficonms

Syntax

```
ficonms ficonmsState
```

Purpose

This command sets the enabled state of the FICON Management Server. The FICON Management Server feature key must be installed in order to enable the FICON Management Server State. (The Edge Switch 2/24 does not accept this command.)

Note: If the FICON Management Server is enabled, the default management style is the FICON management style. The Open Systems management style cannot be used.

Parameters

This command has one parameter:

ficonmsState	Specifies whether the FICON Management Server is enabled. Valid values are `enable` and `disable`. Boolean `1` and `0` may be substituted as values.

Command Example

```
Root> config features ficonms 1
```

Note: This command has functionality that is identical to the config.ficonms.setState command, described on page 47.

config.features.installKey

Syntax

```
installKey featureKey
```

Purpose

This command allows the user to install a feature set that is enabled by the provided feature key. The switch can be either offline or online when the command is executed.

Note: If any currently installed features are being removed by the new feature key, the switch must be offline when the command is given.

Parameters

This command has one parameter:

featureKey	Specifies the key you have received to enable an optional software feature on a specific product. A feature key is a string of case-sensitive, alphanumeric ASCII characters. The number of characters may vary in the format; however, the key must be entered exactly, including the hyphens. An example of a feature key format is XxXx-XXxX-xxXX-xX.

Command Example

```
Root> config features installKey AaBb-CCdD-eeFF-gH
```

config.features.OpenSysMS

Syntax

```
OpenSysMS osmsState
```

Purpose

This command sets the enabled state of the Open Systems Management Server. The Open Systems Management Server feature key must be installed in order to enable the OSMS State.

Parameters

This command has one parameter:

osmsState	Specifies whether the Open Systems Management Server is enabled. Valid values are *enable* and *disable*. Boolean *1* and *0* may be substituted as values.

Command Example

```
Root> config features OpenSysMS 1
```

Note: This command has functionality identical to the config.openSysMS.setState command, described on page 50.

config.features.opentrunking

Syntax

```
opentrunking openTrunkingState
```

Purpose

This command sets the enabled state of the OpenTrunking feature. The OpenTrunking feature key must be installed in order to enable open trunking.

Parameters

This command has one parameter:

openTrunkingState	This parameter can be set to `enable` or `disable` the OpenTrunking feature. Boolean `1` and `0` may be substituted as values.

Command Example

```
Root> config features opentrunking 1
```

Note: This command has functionality that is identical to the perf.opentrunking.setState command, described on page 154.

config.features.show

Syntax

```
show
```

Purpose

This command shows the product feature information configured for this switch. This command provides the same output as the command show.features on page 177.

Parameters

This command has no parameters.

Command Example

```
Root> config features show
```

Output

The product feature data is displayed as a table that includes the following properties:

Installed Feature Set	The feature set installed using a feature key. Only installed keys are displayed.
Feature	Individual features within each set. In many cases, there is only one feature within each feature set.
State	The state of the individual feature. Fabric-wide features are displayed as `Active`/`Inactive`. switch-centric features are displayed as `Enabled`/`Disabled`.

Output Example

The output from the `config.features.show` command displays as follows:

```
Installed Feature Set           Feature             State
------------------------------  ------------------  -----
Open Systems Management Server  OSMS                Enabled
Flex Ports                      8 Flex Ports        Enabled
SANtegrity                      Fabric Binding      Active
SANtegrity                      Switch Binding      Enabled
SANtegrity                      Enterprise Fabrics  Active
```

config.ficonms.setState

Syntax

```
setState ficonmsState
```

Purpose

This command sets the enabled state of the FICON Management Server. The FICON Management Server feature key must be installed in order to enable the FICON Management Server State. (The Edge Switch 2/24 does not accept this command.)

Note: If the FICON Management Server is enabled, the default management style is the FICON management style. The Open Systems management style cannot be used.

Parameters

This command has one parameter:

ficonmsState	Specifies whether the FICON Management Server is enabled. Valid values are `enable` and `disable`. Boolean `1` and `0` may be substituted as values.

Command Example

```
Root> config ficonms setState 1
```

Note: This command has functionality that is identical to the config.features.ficonms command, described on page 41.

config.ip.ethernet

Syntax

```
ethernet ipAddress gatewayAddress subnetMask
```

Purpose

This command sets the Ethernet network settings.

Description

The Telnet connection can be lost when these Ethernet network settings are changed.

If the IP address is reconfigured, your Telnet client must be reconnected to the new IP address. A new login will be requested.

Parameters

This command has three parameters:

ipAddress	Specifies the new IP address for the director or edge switch. The address must be entered in dotted decimal format (for example, 10.0.0.0).
gatewayAddress	Specifies the new gateway address for the Ethernet interface. The address must be entered in dotted decimal format (for example, 0.0.0.0).
subnetMask	Specifies the new subnet mask for the Ethernet interface. The address must be entered in dotted decimal format (for example, 255.0.0.0).

Command Example

```
Root> config ip ethernet 10.0.0.0 0.0.0.0 255.0.0.0
```

config.ip.show

Syntax

```
show
```

Purpose

This command shows the LAN configuration.

Parameters

This command has no parameters.

Command Example

```
Root> config ip show
```

Output

The LAN configuration data is displayed as a table that includes the following properties.

IP Address	The IP address.
Gateway Address	The gateway address.
Subnet Mask	The subnet mask.

Output Example

The output from the `config.ip.show` command displays as follows:

```
IP Address:         10.0.0.0
Gateway Address:    0.0.0.0
Subnet Mask:        255.0.0.0
```

config.openSysMS.setState

Syntax

```
setState osmsState
```

Purpose

This command sets the enabled state of the Open Systems Management Server. The Open Systems Management Server feature key must be installed in order to enable the OSMS State.

Parameters

This command has one parameter:

osmsState	Specifies whether the Open Systems Management Server is enabled. Valid values are *enable* and *disable*. Boolean *1* and *0* may be substituted as values.

Command Example

```
Root> config OpenSysMS setState 1
```

Note: This command has functionality that is identical to the config.features.OpenSysMS command, described on page 43.

config.port.blocked

Syntax

```
blocked portNumber blockedState
```

Purpose

This command sets the blocked state for a port.

Parameters

This command has two required parameters:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140
blockedState	Specifies the blocked state for the port. Valid values are *true* and *false*. Boolean *1* and *0* may be substituted as values.

Command Examples

```
Root> config port blocked 4 false
Root> config port blocked 4 0
```

config.port.extDist

Syntax

```
extDist portNumber extDistOn
```

Purpose

This command sets the extended distance state for a port. (The Edge Switch 2/24 does not accept this command.)

Description

When the extended distance field is *true*, the port is configured for 60 buffer credits, which supports a distance of up to 100 km for a 1 gigabits per second (Gbps) port.

Parameters

This command has two required parameters:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140
extDistOn	Specifies the extended distance state for the port. Valid values are *true* and *false*. Boolean *1* and *0* may be substituted as values.

Command Examples

```
Root> config port extDist 4 false
Root> config port extDist 4 0
```

config.port.fan

Syntax

```
fan portNumber fanOn
```

Purpose

This command sets the fabric address notification (FAN) state for a port (Edge Switch 2/24 only). This configuration can be applied to any port regardless of its current configuration. The FAN value is applied at the time the port is configured and operated in a loop.

Parameters

This command has two required parameters:

portNumber	Specifies the port number. Valid values are: *0–23* for the Edge Switch 2/24
fanOn	Specifies the FAN state for the port. Valid values are *true* and *false*. Boolean *1* and *0* may be substituted as values.

Command Examples

```
Root> config port fan 4 1
```

config.port.name

Syntax

```
name portNumber "portName"
```

Purpose

This command sets the name for a port.

Parameters

This command has two required parameters:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140
portName	Specifies the name for the port. The port name must not exceed 24 characters in length.

Command Example

```
Root> config port name 4 "HP Tape Drive"
```

config.port.show

Syntax

```
show portNumber
```

Purpose

This command displays the port configuration for a single port.

Description

This `show` command, on the config.port branch, displays the current configuration for the specified port.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> config port show 4
```

Output

The port configuration is displayed as a table that includes the following properties:

Port Number	The port number.
Name	The port name.
Blocked	The blocked state. Valid values are `true` and `false`.

Extended Distance	The extended distance configuration state. Valid values are `true` and `false`. This field is not valid for the Edge Switch 2/24.
FAN	The fabric address notification (FAN) state. Valid values are `true` and `false`. (Edge Switch 2/24 only.)
Type	The port type. Valid values are `F Port`, `E Port`, `G Port`, `Fx Port` (Edge Switch 2/24 only), and `Gx Port` (Edge Switch 2/24 only).
Speed	The port speed. Valid values are `1 Gb/sec`, `2 Gb/sec`, and `Negotiate`.

Output Example

The output from the `config.port.show` command displays as follows.

```
Port Number:         4
Name:                HP4 tape drive
Blocked:             false
Extended distance:   false
Type:                F Port
Speed:               2 Gb/sec
```

config.port.speed

Syntax

```
speed portNumber portSpeed
```

Purpose

This command sets the speed for a port.

Description

A port can be configured to operate at 1.0625 Gbps or 2.125 Gbps, or a negotiated speed.

The port speed can be set only to 1.0625 Gbps if the switch speed is 1.0625 Gbps. An attempt to set the port speed to 2.125 Gbps or to negotiate in a switch with a 1 Gbps switch speed results in an error message.

If the port speed is set to negotiate, the port and the device to which it is attached negotiate the data speed setting to either 1.0625 or 2.125 Gbps.

Note: Port speed changes temporarily disrupt port data transfers.

Parameters

This command has two required parameters:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140
portSpeed	Specifies the speed of the port. Valid values are *1g*, *2g*, and *negotiate*.

Command Examples

```
Root> config port speed 4 2g
Root> config port speed 6 negotiate
```

config.port.type

Syntax

```
type portNumber portType
```

Purpose

This command sets the allowed type for a port.

Description

A port can be configured as an F_Port, an E_Port, or a G_Port. On an Edge Switch 2/24, a port can also be an Fx_Port or Gx_Port. The port configurations function as follows:

- F_Port—cannot be used as an interswitch link, but may attach to a device with an N_Port.
- E_Port—only other switch may attach to this type of port.
- G_Port—either a device or another switch may attach to this type of port.
- Fx_Port — allows Arbitrated Loop operation in addition to the functionality of an F_Port. (Edge Switch 2/24 only.)
- Gx_Port—allows Arbitrated Loop operation in addition to the functionality of an F_Port or an E_Port. (Edge Switch 2/24 only.)

Parameters

This command has two required parameters:

portNumber Specifies the port number. Valid values are:

0–15 for the Edge Switch 2/16

0–23 for the Edge Switch 2/24

0–31 for the Edge Switch 2/32

0–63 for the Director 2/64

0–127 and *132–143* for the Director 2/140

portType	Specifies the type of the port. Valid values are *eport*, *fport*, and *gport*, *fxport* (Edge Switch 2/24 only) *gxport* (Edge Switch 2/24 only).

Command Example

```
Root> config port type 4 fport
```

config.security.fabricBinding Commands

The `config.security.fabricBinding` commands function in a different way from most CLI commands, which are single action commands that take effect immediately. The first Fabric Binding command entered invokes a work-area editor. The commands take effect on a temporary copy of a Fabric Membership List in the work area until the temporary copy in the work area is activated to the fabric — or is discarded.

Because not all the verification of the Fabric Membership List can occur on the temporary copy in the work area, it is possible, however unlikely, that the copy of the list encounters no errors until the list is activated to the fabric.

These commands include the following:

- config.security.fabricBinding.activatePending
- config.security.fabricBinding.addMember
- config.security.fabricBinding.clearMemList
- config.security.fabricBinding.deleteMember
- config.security.fabricBinding.replacePending
- config.security.fabricBinding.setState
- config.security.fabricBinding.showActive
- config.security.fabricBinding.showPending

config.security.fabricBinding.activatePending

Syntax

```
activatePending
```

Purpose

This command activates the fabric binding configuration contained in the pending work area to the fabric.

Note: This command takes effect immediately. The CLI verifies the list before activating it to the fabric and adds the managed switch to the list if it is not already present.

Parameters

This command has no parameters:

Command Examples

```
Root> config security fabricBinding activatePending
```

config.security.fabricBinding.addMember

Syntax

```
ddMember wwn domainId
```

Purpose

This command adds a new member to the Fabric Membership List in the pending fabric binding work area. The number of entries is limited to the maximum available domain IDs for the fabric (31).

Note: Changes from this command are not activated to the fabric until the `activatePending` command is issued.

Parameters

This command has two parameters:

wwn	Specifies the World Wide Name (WWN) of the member to be added to the Fabric Membership List. The value of the WWN must be in colon-delimited hexadecimal notation (for example, AA:00:AA:00:AA:00:AA:00).
domainId	The domain ID of the member to be added to the Fabric Membership List. Valid domain ID's range from 1 to 31.

Command Examples

```
Root> config security fabricBinding addMember
AA:99:23:23:08:14:88:C1 2
```

config.security.fabricBinding.clearMemList

Syntax

```
clearMemList
```

Purpose

This command clears the Fabric Membership List for the pending fabric binding working area.

Note: This information is not saved to the fabric until the `activatePending` command is issued. When the list is cleared, the CLI automatically adds the managed switch to the Fabric Membership List.

Parameters

This command has no parameters.

config.security.fabricBinding.deleteMember

Syntax

```
deleteMember wwn domainId
```

Purpose

This command removes a member from the Fabric Membership List in the pending fabric binding work area.

Note: Changes are not activated to the fabric until the `activatePending` command is issued.

Parameters

This command has two parameters:

wwn	Specifies the WWN of the member to be removed from the Fabric Membership List. The value of the WWN must be in colon-delimited hexadecimal notation (for example, AA:00:AA:00:AA:00:AA:00).
domainId	The domain ID of the member to be removed from the Fabric Membership List. Valid domain ID's range from 1 to 31.

Command Examples

```
Root> config security fabricBinding deleteMember
AA:99:23:23:08:14:88:C1

Root> config security fabricBinding deleteMember 2
```

config.security.fabricBinding.replacePending

Syntax

```
replacePending
```

Purpose

This command replaces the pending working area with the fabric binding configuration that is currently loaded on the fabric.

Parameters

This command has no parameters:

Command Examples

```
Root> config security fabricBinding replacePending
```

config.security.fabricBinding.setState

Syntax

```
setState fabricBindingState
```

Purpose

This command sets the fabric binding state for the pending fabric binding configuration work area.

Note: This state is not saved to the fabric until the `activatePending` command is issued.

Parameters

This command has one parameter:

fabricBindingState	Specifies the fabric binding state for the pending fabric binding configuration work area. Valid values are: *inactive* — Deactivates fabric binding. Switches and directors are allowed to join the fabric without restriction. The Fabric Membership List is empty in this state, and as such, the Fabric Membership List is cleared when this state is requested. *restrict* — Activates fabric binding and restricts connections. Only switches identified in the Fabric Membership List may join the fabric in this state. The Fabric Membership List is automatically populated with devices attached prior to activation, but all new members must be manually added before connecting. The switch must be online to complete this request. You can substitute the following Boolean values: *0* for *inactive* and *1* for *restrict*.

Command Examples

```
Root> config security fabricBinding setstate restrict
```

config.security.fabricBinding.showActive

Syntax

```
showActive
```

Purpose

This command displays the fabric binding configuration saved on the fabric. It performs the same function as `show.security.fabricBinding`.

Parameters

This command has no parameters.

Output

This command displays the following fabric binding configuration data:

Fabric Binding State	The active fabric binding state: `Inactive` or `Active Restricting`
Fabric Membership List	The active Fabric Membership List.

Output Example

The output from the `config.security.fabricBinding.showActive` command displays as follows:

```
Fabric Binding State:   Active Restricting
Domain 1  (00:11:22:33:44:55:66:77
Domain 2  (88:99:AA:BB:CC:DD:EE:FF)
Domain 14 (11:55:35:45:24:78:98:FA)
```

config.security.fabricBinding.showPending

Syntax

```
showPending
```

Purpose

This command displays the fabric binding configuration in the pending working area and has not yet been activated to the fabric. If no changes have been made to the pending environment, the CLI displays the active membership list.

Parameters

This command has no parameters.

Output

The fabric binding configuration data is displayed as a table that includes the following properties:

Fabric Binding State	The active fabric binding state: `Inactive` or `Active Restricting`
Fabric Membership List	The active Fabric Membership List.

Output Example

The output from the `config.security.fabricBinding.showActive` command displays as follows:

```
Fabric Binding State:   Active Restricting
Domain 1  (00:11:22:33:44:55:66:77)
Domain 2  (88:99:AA:BB:CC:DD:EE:FF)
Domain 14 (11:55:35:45:24:78:98:FA)
```

config.security.portBinding Commands

The `config.security.portBinding` commands include the following:

- config.security.portBinding.bound
- config.security.portBinding.wwn
- config.security.portBinding.show

config.security.portBinding.bound

Syntax

```
bound portNumber portBindingState
```

Purpose

This command sets the port binding state for a given port.

Parameters

This command has two parameters:

portNumber	Specifies the port number for which the port binding state is being set. Valid port number values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140
portBindingState	Specifies the port binding state as active or inactive. Valid values are *true* and *false*. The *true* parameter sets the port binding to active. The specified port will be bound to the WWN configured with the `config.security.portBinding.wwn` command. If no WWN has been configured, no devices can log in to that port. The *false* parameter sets the port binding to inactive. Any device is free to connect to the specified port in this state, regardless of the WWN setting. Boolean *1* and *0* may be substituted as values.

Command Examples

```
Root> config security portBinding bound 4 true
Root> config security portBinding bound 4 1
```

config.security.portBinding.wwn

Syntax

```
wwn portNumber boundWwn
```

Purpose

This command configures the single device WWN to which a port is bound.

Parameters

This command has two parameters:

portNumber — Specifies the port number for which the bound WWN is being set. Valid port number values are:

- `0-15` for the Edge Switch 2/16
- `0-23` for the Edge Switch 2/24
- `0-31` for the Edge Switch 2/32
- `0-63` for the Director 2/64
- `0-127` and `132-143` for the Director 2/140

boundWwn — Specifies the WWN of the device that is being bound to the specified port. The value must be entered in colon-delimited hexidecimal notation (for example, *11:22:33:44:55:66:AA:BB*).

If the *boundWwn* is configured and the `portBindState` is:

Active — only the device described by *boundWwn* will be able to connect to the specified port.

Inactive — the WWN is retained, but any device can connect to the specified port.

Instead of the WWN, either of two values can be entered in this parameter:

attached automatically configures the currently attached device WWN as the bound WWN.

remove changes the WWN to the default value, `00:00:00:00:00:00:00:00`. Even though this removes the WWN-port association, if the `portBindingState` value set with the `config.security.portBinding.bound` command is still `true` (the port binding is `active`), other devices are prevented from logging in to this port. To allow other devices to log in to this port, use the `config.security.portBinding.bound` command to set the `portBindingState` parameter to *false*.

Command Examples

```
Root> config security portBinding wwn 4 AA:99:23:23:08:14:88:C1
Root> config security portBinding wwn 4 attached
Root> config security portBinding wwn 4 remove
```

config.security.portBinding.show

Syntax

```
show portNumber
```

Purpose

This command shows the port binding configuration for a single port.

Parameters

This command has one parameter:

portNumber	Specifies the port number for which the port binding configuration will be shown. Valid values are: `0-15` for the Edge Switch 2/16 `0-23` for the Edge Switch 2/24 `0-31` for the Edge Switch 2/32 `0-63` for the Director 2/64 `0-127` and `132-143` for the Director 2/140

Command Example

```
Root> config security portBinding show 4
```

Output

The port binding configuration date is displayed as a table that includes the following properties:

Port Number	The port number.
WWN Binding	The state of port binding for the specified port, either `active` or `inactive`.
Bound WWN	The WWN of the device that is bound to the specified port. If this field is blank, no device has been bound to the specified port.

Output Example

The output from the `config.security.portBinding.show` command displays as follows.

```
Port Number:          4
WWN Binding:          Active
Bound WWN:            AA:99:23:23:08:14:88:C1
```

config.security.switchBinding Commands

The `config.security.switchBinding` commands include the following:

- config.security.switchBinding.addMember
- config.security.switchBinding.deleteMember
- config.security.switchBinding.setState
- config.security.switchBinding.show

config.security.switchBinding.addMember

Syntax

```
addMember wwn
```

Purpose

This command adds a new member to the Switch Membership List. A maximum number of 256 members may be added to the Switch Membership List.

Parameters

This command has one parameter:

wwn	Specifies the switch or N-Port device WWN of the member to be added to the Switch Membership List. The value of the WWN must be in colon-delimited hexadecimal notation (for example, *AA:00:AA:00:AA:00:AA:00*).

Command Examples

```
Root> config security switchBinding addMember
AA:99:23:23:08:14:88:C1
```

config.security.switchBinding.deleteMember

Syntax

```
deleteMember wwn
```

Purpose

This command removes a member from the Switch Membership List. The user cannot remove a member that is currently logged into the switch.

Parameters

This command has one parameter:

wwn	Specifies the switch or N-Port device WWN of the member to be removed from the Switch Membership List. The value of the WWN must be in colon-delimited hexadecimal notation (for example, *AA:00:AA:00:AA:00:AA:00*). The user may also enter `all` for this argument to clear the Switch Membership List completely. Note that the user cannot clear a WWN that is currently logged into the switch.

Command Examples

```
Root> config security switchBinding deleteMember
AA:99:23:23:08:14:88:C1
```

config.security.switchBinding.setState

Syntax

```
setState switchBindingState
```

Purpose

This command sets the switch binding state on the switch.Parameters

This command has one parameter:

switchBindingState	Sets the switch binding state for the switch. Valid values are: `disable` — Disable switch binding. Devices (servers, storage, and other switches) are allowed to connect to the switch without restrictions. `eRestrict` — Enable switch binding and restrict E_Port connections. E_Ports are prevented from forming ISL connections unless explicitly identified in the Switch Membership List. F_Port connections are allowed without restriction. `fRestrict` — Enable switch binding and restrict F_Port connections. Server and (or) storage devices are prevented from forming F_Port connections with the switch unless explicitly identified in the Switch Membership List. E_Ports are allowed to form ISL connections without restriction. `allRestrict` — Enable switch binding and restrict E_Port and F_Port connections. Both E_Ports and F_Ports prohibit connections with all devices unless explicitly identified in the Switch Membership List.

Command Examples

```
Root> config security switchBinding setState allRestrict
```

config.security.switchBinding.show

Syntax

```
show
```

Purpose

This command displays the switch binding configuration.

Parameters

This command has no parameters.

Output

This command displays the following switch binding configuration data:

switchBindingState	The state of switch binding, which can have the following values: `Disabled`, `Enabled and Restricting F_Ports`, `Enabled and Restricting E_Ports`, or `Enabled and Restricting All Ports`.
Switch Membership List	The Switch Membership List saved on the switch.

Output Example

The output from the `config.security.portBinding.show` command displays as follows:

```
Switch Binding State:   Enabled and Restricting E Ports
00:11:22:33:44:55:66:77
88:99:AA:BB:CC:DD:EE:FF
11:55:35:45:24:78:98:FA
```

config.security.userRights Commands

The `config.security.userRights` commands include the following:

- config.security.userRights.administrator
- config.security.userRights.operator
- config.security.userRights.show

config.security.userRights.administrator

Syntax

```
administrator "username" "password"
```

Purpose

This command sets the name and password for administrator-level access.

Description

Immediately after the name and password for the administrator is set, you will be prompted to log in with the new access rights.

Parameters

This command has two parameters:

username	Specifies the new user name for administrator-level login.
	Default is set to *Administrator*.
	This parameter is 1–15 characters.
	Valid characters include all characters in the USASCII character set, excluding control characters and spaces.
	Spaces are not valid even though quotation marks are used.
password	Specifies the password for administrator-level login.
	Default is set to *password*.
	This parameter is 1–15 characters.
	Valid characters include all characters in the USASCII character set, excluding control characters and spaces.
	Spaces are not valid even though quotation marks are used.

Command Example

```
Root> config security userRights administrator "Administrator"
"newpassword"
```

config.security.userRights.operator

Syntax

```
operator "username" "password"
```

Purpose

This command sets the name and password for operator-level access.

Parameters

This command has two parameters:

username	Specifies the new user name for operator-level login. Default is `Operator`. This parameter is 1–15 characters. Valid characters include all characters in the USASCII character set, excluding control characters and spaces. Spaces are not valid even though quotation marks are used.
password	Specifies the password for operator-level login. Default is `password`. This parameter is 1–15 characters. Valid characters include all characters in the USASCII character set, excluding control characters and spaces. Spaces are not valid even though quotation marks are used.

Command Example

```
Root> config security userRights operator "Operator"
"newpassword"
```

config.security.userRights.show

Syntax

```
show
```

Purpose

This command shows the user rights for the CLI access levels.

Parameters

This command has no parameters.

Command Example

```
Root> config security userRights show
```

Output

The user rights configuration data is displayed as a table that includes the following properties.

Operator Username	The username for operator privileges.
Operator Password	The password for operator privileges.
Administrator Username	The username for administrator privileges.
Administrator Password	The password for administrator privileges.

Output Example

The output from the `config.security.userRights.show` command displays as follows.

```
Operator Username: Operator
Operator Password: **************
Administrator Username: Administrator
Administrator Password: ***************
```

config.snmp.addCommunity

Syntax

```
addCommunity commIndex "commName" writeAuthorization
trapRecipient udpPortNum
```

Purpose

This command adds an SNMP community to the SNMP configuration.

Parameters

This command has five parameters. Up to six community names and trap recipients may be defined.

commIndex	Specifies the community to be created or edited. Valid values are integers in the range *1–6*.
commName	Specifies the community name of the community specified by commIndex. The community name must not exceed 32 characters in length. Valid characters include all those in the ISO Latin-1 character set. Duplicate community names are allowed, but the corresponding *writeAuthorization* values must match.
writeAuthorization	Specifies the write authorization state of the community. Valid values are *enabled* and *disabled*. Boolean *1* and *0* may be substituted as values.
trapRecipient	Specifies the trap recipient. Values must be 4 bytes in dotted-decimal format.
udpPortNum	Specifies the user datagram protocol (UDP) port number to which the director sends traps for each recipient. The value can be a decimal number or the default, which 162. Valid values include all legal UDP port numbers.

Command Example

```
Root> config snmp addCommunity 1 "CommunityName1" enabled
123.123.123.123 162
```

config.snmp.authTraps

Syntax

```
authTraps enabledState
```

Purpose

This command enables or disables the authorization traps to be sent to SNMP management stations when unauthorized stations try to access SNMP information from the director or edge switch.

Parameters

This command has one parameter:

enabledState	Specifies whether the authorization traps are enabled. Valid values are *true* and *false*. Boolean *1* and *0* may be substituted as values.

Command Examples

```
Root> config snmp authTraps true
Root> config snmp authTraps 1
```

config.snmp.deleteCommunity

Syntax

```
deleteCommunity commIndex
```

Purpose

This command entirely deletes a community from the SNMP.

Parameters

This command has one parameter:

commIndex	Specifies the community to be deleted. Valid values are integers in the range *1–6*. This value was set in the commIndex parameter of the `config.snmp.addCommunity` command. Valid values are integers in the range *1–6*.

Command Example

```
Root> config snmp deleteCommunity 5
```

config.snmp.show

Syntax

```
show
```

Purpose

This command shows the switch SNMP configuration.

Parameters

This command has no parameters.

Command Example

```
Root> config snmp show
```

Output

The switch configuration data is displayed as a table that includes the following properties.

Authorization Traps	The state of the authorization traps (for example, enabled) that will be sent to SNMP management stations when unauthorized stations attempt to access SNMP information from the switch.
Index	The community index number.
Community Name	The name of the community.
writeAuth	The write authorization state.
Trap Recipient	The address of the trap recipient shown in 4-byte dotted-decimal format.
UDP Port	The user datagram protocol (UDP) port number to which the director will send traps for each recipient.

Output Example

The output from the `config.snmp.show` command displays as follows.

```
Authorization Traps: Enabled

Index Community Name          WriteAuth Trap Recipient   UDP Port
----- ----------------------  --------- ---------------- -----
1     CommunityName1          Enabled   123.123.123.123  162
2     CommunityName2          Enabled   10.25.25.10      144
3     CommunityName3          Disabled  132.44.85.224    162
4     public                  Enabled                    162
5
6
```

config.switch Commands

All of the `config.switch` commands, except for the `config.switch.show` command, require that the switch be set offline. (Use the `maint.system.setOnlineState` to set the switch offline.) If these commands are entered while the switch is online, an error message results.

The `config.switch` commands include the following:

- config.switch.bbCredit
- config.switch.domainRSCN
- config.switch.insistDomainId
- config.switch.edTOV
- config.switch.interopMode
- config.switch.prefDomainId
- config.switch.priority
- config.switch.raTOV
- config.switch.rerouteDelay
- config.switch.speed
- config.switch.show
- config.switch.zoningRSCN

config.switch.bbCredit

Syntax

```
bbCredit bbCreditValue
```

Purpose

This command sets the buffer-to-buffer credit value for all ports, except those ports configured for extended distance. (The Edge Switch 2/24 does not accept this command.)

Description

The switch must be set offline before this command is entered.

Parameters

This command has one parameter:

bbCreditValue	Specifies the new buffer-to-buffer credit value. This parameter must be an integer in the range *1–60*.

Command Example

```
Root> config switch bbCredit 2
```

config.switch.domainRSCN

Syntax

```
domainRSCN domainRSCNState
```

Purpose

This command sets the domain RSCN state for the switch. The switch can be either offline or online when this command is executed.

Parameters

This command has one parameter:

domainRSCNState	Specifies whether the domain RSCN state is enabled. Valid values are `enable` and `disable`. Boolean `1` and `0` may be substituted as values.

Command Example

```
Root> config switch domainRSCN 1
```

config.switch.insistDomainId

Syntax

```
insistDomainId insistentDomainIdState
```

Purpose

This command sets the insistent domain ID state for the switch.

Parameters

This command has one parameter:

insistentDomainIdState	Specifies whether the insistent domain ID state is enabled. Valid values are *enable* and *disable*. Boolean *1* and *0* may be substituted as values.

Command Example

```
Root> config switch insistDomainId 1
```

config.switch.edTOV

Syntax

```
edTOV timeoutValue
```

Purpose

This command sets the E_D_TOV for the switch.

Description

The switch must be set offline before this command is entered.

Special care should be used when scripting this command due to its relationship with R_A_TOV.

Parameters

This command has one parameter:

timeoutValue	Specifies the new E_D_TOV value. The units for this value are tenths of a second. This parameter must be an integer in the range *2–600* (0.2 second to 60 seconds), and it must be smaller than the R_A_TOV.

Command Example

```
Root> config switch edTOV 4
```

config.switch.interopMode

Syntax

```
interopMode interopMode
```

Purpose

This command sets the interoperability mode for the switch. The switch must be offline to complete this command.

Description

The switch must be set offline before this command is entered.

Parameters

This command has one parameter:

interopMode	Specifies the interoperability mode. Valid values are: ■ *mcdata* (for Homogenous Fabric mode) ■ *open* (for Open Fabric 1.0 mode)

Command Example

```
Root> config switch interopMode open
```

config.switch.prefDomainId

Syntax

```
prefDomainId domainId
```

Purpose

This command sets the preferred domain ID for the switch.

Description

The switch must be set offline before this command is entered.

Parameters

This command has one parameter:

domainId	Specifies the new preferred domain ID value. This parameter must be an integer in the range *1–31*.

Command Example

```
Root> config switch prefDomainId 1
```

config.switch.priority

Syntax

```
priority switchPriority
```

Purpose

This command sets the switch priority.

Description

The switch must be set offline before this command is entered.

Parameters

This command has one parameter:

switchPriority Specifies the switch priority. Valid values are: `principal`, `default`, or `neverprincipal`.

- `principal` — sets the numerical switch priority to 1. The switch with a priority of 1 becomes the principal switch; however, if two or more switches have a priority of 1, the switch with the lowest WWN becomes the principal switch.
- `default` — sets the numerical switch priority to 254. If no switch is set to principal, the switch with a priority 254 becomes the principal switch; however, if two or more switches have a priority of 254, the switch with the lowest WWN becomes the principal switch.
- `neverprincipal` — sets the numerical switch priority to 255. This switch is not able to become the principal switch.

Note: At least one switch in a multiswitch fabric must have a switch priority value of `principal` or `default`.

Note: The number codes 2–253 are not currently in use.

Command Example

```
Root> config switch priority principal
```

config.switch.raTOV

Syntax

```
raTOV timeoutValue
```

Purpose

This command sets the R_A_TOV for the switch.

Description

The switch must be set offline before this command is entered.

Special care should be used when scripting this command due to its relationship with E_D_TOV.

Parameters

This command has one parameter:

timeoutValue	Specifies the new R_A_TOV value. The units for this value are tenths of a second. This parameter must be an integer in the range *10–1200* (1 second to 120 seconds), and must be larger than the E_D_TOV.

Command Example

```
Root> config switch raTOV 20
```

config.switch.rerouteDelay

Syntax

```
rerouteDelay rerouteDelayState
```

Purpose

This command enables or disables rerouting delay for the switch.

Description

The switch must be set offline before this command is entered.

This command is only applicable if the configured switch is in a multiswitch fabric. Enabling the rerouting delay ensures that frames are delivered in order through the fabric to their destination.

If there is a change to the fabric topology that creates a new path (for example, a new switch is added to the fabric), frames may be routed over this new path if its hop count is less than a previous path with a minimum hop count. This may result in frames being delivered to a destination out of order because frames sent over the new, shorter path may arrive ahead of older frames still in route over the older path.

If rerouting delay is enabled, traffic ceases in the fabric for the time specified in the `config.switch.edTOV` command. This delay allows frames sent on the old path to exit to their destination before new frames begin traversing the new path. Note that during this delay period, frames addressed to the destinations that are being rerouted are discarded if they are Class 3 frames and rejected if they are Class 2 or Class F frames.

Parameter

This command has one parameter:

rerouteDelayState	Specifies whether rerouting delay is enabled. Valid values are *true* and *false*. Boolean *1* and *0* may be substituted as values.

Command Examples

```
Root> config switch rerouteDelay true
Root> config switch rerouteDelay 1
```

config.switch.speed

Syntax

```
speed switchSpeed
```

Purpose

This command sets the speed for the switch.

Note: This command is only applicable for the Director 2/64. Edge switches and the Director 2/140 cannot change speed.

Description

The switch must be set offline before this command is entered.

A switch can be configured to operate at 1.0625 Gbps or 2.125 Gbps.

If the switch has fibre port module (FPM) cards, configuring the switch speed to 2.125 Gbps makes all the ports on the FPM cards inactive, and their operational state will be set to inactive. FPM ports do not support 2.125 Gbps and, therefore, will remain inactive after the switch is returned to the online state.

Parameters

This command has one required parameter:

switchSpeed	Specifies the speed of the switch. Valid values are *1g* (for 1.0625 Gbps) or *2g* (for 2.125 Gbps).

Command Examples

```
Root> config switch speed 2g
```

config.switch.show

Syntax

```
show
```

Purpose

This command shows the switch configuration.

Parameters

This command has no parameters.

Description

This switch can be either offline or online when this command is executed.

Command Example

```
Root> config switch show
```

Output

The switch configuration data is displayed as a table that includes the following properties.

BB Credit	The maximum number of outstanding frames that can be transmitted without causing a buffer overrun condition at the receiver.
R_A_TOV	Resource Allocation Time Out Value. This value is set in tenths of a second.
E_D_TOV	Error Detect Time Out Value. This value is set in tenths of a second.
Preferred Domain Id	The preferred domain ID of the switch.
Switch Priority	The switch priority. Values are `Principal`, `Default`, or `Never Principal`.

Speed	The switch speed. (This parliamentary is not valid for the Edge Switch 2/24.)
Rerouting Delay	The rerouting delay that ensures that frames are delivered in order through the fabric to their destination. Values are `Enabled` or `Disabled`.
Interop Mode	Interoperability mode for the switch.
Insistent Domain Id	When enabled, ensures that the embedded firmware cannot change a switch's preferred domain ID.
Domain RSCN	When enabled, allows domain RSCNs to be sent to registered members of the fabric
Zoning RSCN	When enabled, allows zoning RSCNs to be sent to registered members of the fabric

Output Example

The output from the `config.switch.show` command displays as follows.

```
BB Credit:           2
R_A_TOV:             20
E_D_TOV:             4
Preferred Domain Id: 1
Switch Priority:     Principal
Speed:               2 Gb/sec
Rerouting Delay:     Enabled
Interop Mode:        Open Fabric 1.0
Insistent Domain Id: Disabled
Domain RSCN:         Enabled
Zoning RSCN:         Disabled
```

config.switch.zoningRSCN

Syntax

```
zoningRSCN zoningRSCNState
```

Purpose

This command sets the zoning RSCN state for the switch. The switch can be either offline or online when this command is executed.

Parameters

This command has one parameter:

zoningRSCNState	Specifies whether the zoning RSCN state is enabled. Valid values are *enable* and *disable*. Boolean *1* and *0* may be substituted as values.

Command Example

```
Root> config switch zoningRSCN 1
```

config.system.contact

Syntax

```
contact "systemContact"
```

Purpose

This command sets the system contact attribute.

Parameters

This command has one parameter:

systemContact	Specifies the new system contact string for the director or edge switch. The contact can contain 0–255 characters.

Command Example

```
Root> config system contact "Joe"
```

config.system.date

Syntax

```
date sysDate sysTime
```

Purpose

This command sets the system date and time.

Parameters

This command has two required parameters:

sysDate Specifies the new system date.

The format of the date parameter must be mm:dd:yyyy or mm/dd/yyyy.

Valid date values include:

- mm: *1–12*
- dd: *1–31*
- yyyy: *>1980*

sysTime Specifies the new system time.

The format of the time parameter must be hh:mm:ss.

Valid time values include:

- hh: *0–23*
- mm: *0–59*
- ss: *0–59*

Command Examples

```
Root> config system date 04:16:2001 10:34:01
Root> config system date 10/09/2001 14:07:55
```

config.system.description

Syntax

```
description "systemDescription"
```

Purpose

This command sets the system description string.

Parameters

This command has one parameter:

systemDescription	Specifies the new system description string for the director or edge switch. The name can contain 0–255 characters.

Command Example

```
Root> config system description "hp StorageWorks director 2/64"
```

config.system.location

Syntax

```
location "systemLocation"
```

Purpose

This command sets the system location attribute.

Parameters

This command has one parameter:

systemLocation	Specifies the new system location for the director or edge switch. The location can contain 0–255 characters.

Command Example

```
Root> config system location "Everywhere"
```

config.system.name

Syntax

```
name "systemName"
```

Purpose

This command sets the system name attribute.

Parameters

This command has one required parameter:

systemName	Specifies the new system name for the director or edge switch. The name can contain 0–24 characters.

Command Example

```
Root> config system name "hp edge switch 2/32"
```

config.system.show

Syntax

```
show
```

Purpose

This command shows the system configuration.

Parameters

This command has no parameters.

Command Example

```
Root> config system show
```

Output

The system configuration is displayed as a table that includes the following properties.

Name	The system name.
Description	The system description.
Contact	The system contact.
Location	The system location.
Date/Time	The system date and time.

Output Examples

The output from the `config.system.show` command displays as follows.

```
Name:           hp director
Description:    hp StorageWorks director 2/64
Contact:        Joe
Location:       Everywhere
Date/Time:      04/16/2001 10:34:01
```

config.zoning Commands

The `config.zoning` commands function in a different way from the other CLI commands, which are single action commands that take effect immediately. A zoning configuration is typically too complicated to be described by a single command, so the first zoning command entered invokes a work-area editor. The commands take effect on a temporary copy of a zone set in the work area until the temporary copy in the work area is activated to the fabric — or is discarded.

Because not all the verification of the zone set can occur on the temporary copy in the work area, it is possible, however unlikely, that the copy of the zone set encounters no errors until the zone set is activated to the fabric.

Note: Port numbers cannot be used for zone members if the interoperability mode for the switch or director is set to Open Fabric 1.0 mode. In this case, you must use node WWNs as zone members.

The config.zoning commands include the following:

- config.zoning.setDefZoneState
- config.zoning.activateZoneSet
- config.zoning.deactivateZoneSet
- config.zoning.replaceZoneSet
- config.zoning.clearZoneSet
- config.zoning.addZone
- config.zoning.deleteZone
- config.zoning.renameZoneSet
- config.zoning.addWwnMem
- config.zoning.addPortMem
- config.zoning.clearZone
- config.zoning.deleteWwnMem
- config.zoning.deletePortMem
- config.zoning.renameZone
- config.zoning.showPending
- config.zoning.showActive

config.zoning.setDefZoneState

Syntax

```
setDefZoneState defaultZoneState
```

Purpose

This command enables or disables the default zone and takes effect immediately fabric wide.

Description

This command takes effect immediately in the fabric.

Parameters

This command has one parameter:

defaultZoneState	Specifies whether the default zone is enabled. Valid values are *true* and *false*. Boolean *1* and *0* may be substituted as values.

Command Examples

```
Root> config zoning setDefZoneState false
Root> config zoning setDefZoneState 0
```

config.zoning.activateZoneSet

Syntax

```
activateZoneSet
```

Purpose

This command activates the zone set contained in the work area to the fabric and takes effect immediately.

Description

This command takes effect immediately in the fabric.

Parameters

This command has no parameters.

Command Example

```
Root> config zoning activateZoneSet
```

Note: If the interoperability mode for the switch or director is set to Open Fabric 1.0 mode when the zone is activated, any zone members specified by port number are ignored.

config.zoning.deactivateZoneSet

Syntax

```
deactivateZoneSet
```

Purpose

This command places all attached devices in the default zone if the default zone is enabled and takes effect immediately for the entire fabric. If the default zone is not enabled, there will be no zoning in effect and all attached devices will be unable to communicate with any other attached device. This command clears both the active zone set and the working area.

Description

The default zone must be activated independently of this command.

Note: This command takes effect immediately in the fabric.

Parameters

This command has no parameters.

Command Example

```
Root> config zoning deactiveZoneSet
```

config.zoning.replaceZoneSet

Syntax

```
replaceZoneSet
```

Purpose

This command replaces the work area with the active zone set that is currently loaded on the fabric.

Parameters

This command has no parameters.

Command Example

```
Root> config zoning replaceZoneSet
```

config.zoning.clearZoneSet

Syntax

```
clearZoneSet
```

Purpose

This command clears the zone set contained in the work area, removing all zones, and takes effect immediately.

Description

This command does not change the zone set name.

Parameters

This command has no parameters.

Command Example

```
Root> config zoning clearZoneSet
```

config.zoning.addZone

Syntax

```
addZone "zoneName"
```

Purpose

This command adds a new (empty) zone to the zone set in the work area. (A switch or director can have a maximum of 1024 zones.)

Description

Changes are not activated on the switch until the `config.zoning.activateZoneSet` command is issued.

Parameters

This command has one parameter:

zoneName — Specifies the name of the new zone.

The zoneName must contain 1–64 characters.

Valid characters are:

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789$-^_

Spaces are not permitted, and the first character must be alphabetical.

Command Example

```
Root> config zoning addZone TheUltimateZone
```

config.zoning.deleteZone

Syntax

```
deleteZone "zoneName"
```

Purpose

This command deletes a zone from the zone set in the work area.

Description

Changes are not activated on the switch until the `config.zoning.activeZoneSet` command is issued.

Parameters

This command has one parameter:

zoneName Specifies the name of the zone to be deleted.

Command Example

```
Root> config zoning deleteZone TheLeastUltimateZone
```

config.zoning.renameZoneSet

Syntax

```
renameZoneSet "zoneSetName"
```

Purpose

This command changes the name of the zone set in the work area.

Description

Changes are not activated on the switch until the `config.zoning.activateZoneSet` command is issued.

Parameters

This command has one parameter:

zoneSetName — Specifies the new name for the zone set.

The *zoneSetName* must contain 1–64 characters.

Valid characters are:

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789$-^_

Spaces are not permitted, and the first character must be alphabetical.

Command Example

```
Root> config zoning renameZoneSet TheUltimateZoneSet
```

config.zoning.addWwnMem

Syntax

```
addWwnMem "zoneName" wwn
```

Purpose

This command adds a World Wide Name zone member to the specified zone in the work area.

Description

A product can have a maximum of 1024 zone members in its zones.

Parameters

This command has two parameters:

zoneName	Specifies the name of the zone.
wwn	The World Wide Name of the member to be added to the zone. The value of the WWN must be in colon-delimited hexadecimal notation. For example: *AA:00:AA:00:AA:00:AA:00*.

Command Example

```
Root> config zoning addWwnMem TheUltimateZone
10:00:00:00:C9:22:9B:64
```

config.zoning.addPortMem

Syntax

```
addPortMem "zoneName" domainId portNumber
```

Purpose

This command adds the domain ID and port number of a zone member to the specified zone in the work area.

Note: Port numbers cannot be used for zone members if the interoperability mode for the switch or director is set to Open Fabric 1.0 mode.

Description

A product can have a maximum of 1024 zone members in its zones.

Parameters

This command has three parameters:

zoneName	Specifies the name of the zone.
domainId	Specifies the domain ID of the member to be added to the zone. Valid values are in the range *1–31*.
portNumber	Specifies the port number of the member to be added to the zone. Valid port number values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> config zoning addPortMem TheUltimateZone 10 6
```

config.zoning.clearZone

Syntax

```
clearZone "zoneName"
```

Purpose

This command clears all zone members for the specified zone in the work area.

Description

This command does not change the zone name.

Parameters

This command has one parameter:

zoneName	Specifies the name of the zone to be cleared.

Command Example

```
Root> config zoning clearZone TheNotUltimateAtAllZone
```

config.zoning.deleteWwnMem

Syntax

```
deleteWwnMem "zoneName" wwn
```

Purpose

This command removes a WWN member from a zone that is in the work area.

Parameters

This command has two parameters:

zoneName	Specifies the name of the zone that contains the member to be deleted.
wwn	Specifies the World Wide Name of the member to be deleted from the zone. The value of the WWN must be in colon-delimited hexidecimal notation. For example: *AA:00:AA:00:AA:00:AA:00*.

Command Example

```
Root> config zoning deleteWwnMem TheNotSoUltimateZone
10:00:00:00:C9:22:9B:AB
```

config.zoning.deletePortMem

Syntax

```
deletePortMem "zoneName" domainId portNumber
```

Purpose

This command deletes a domain ID and port number for a zone member in the specified zone in the work area.

Parameters

This command has three parameters:

zoneName	Specifies the name of the zone that contains the member to be deleted.
domainId	Specifies the domain ID of the member to be deleted from the zone. Valid domain IDs are in the range 1–31.
portNumber	Specifies the port number of the member to be deleted from the zone. Valid port numbers values are: *0–15* for the Edge Switch 2/16 *00–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> config zoning deletePortMem TheUltimateZone 10 5
```

config.zoning.renameZone

Syntax

```
renameZone "oldZoneName" "newZoneName"
```

Purpose

This command renames a zone in the work area.

Parameters

This command has two parameters:

oldZoneName	Specifies the current zone name of the zone to be renamed.
newZoneName	Specifies the new zone name. The *newZoneName* must contain 1–64 characters. Valid characters are: *ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz$-^_* Spaces are not permitted, and the first character must be alphabetical.

Command Example

```
Root> config zoning renameZone TheOldUltimateZone
TheUltimateZone
```

config.zoning.showPending

Syntax

```
showPending
```

Purpose

This command shows the zoning configuration in the work area of the zone set that has not yet been activated.

Parameters

This command has no parameters.

Command Example

```
Root> config zoning showPending
```

Output

The zoning configuration data is displayed as a table that includes the following properties:

Local ZoneSet	The enabled status, name, and member zones of the zone set.

Output Example

The output from the `config.zoning.showPending` command displays as follows.

```
Pending Zone Set
Default Zone Enabled:  False
ZoneSet:  TheNewUltimateZoneSet
    Zone:  TheNewUltimateZone
           ZoneMember: Domain 10, Port 6
           ZoneMember: Domain 15, Port 2
    Zone:  TheNewNotSoUltimateZone
           ZoneMember: 10:00:00:00:C9:22:9B:AB
           ZoneMember: 10:00:00:00:C9:22:9B:C6
           ZoneMember: 10:00:00:00:C9:22:9B:AB
    Zone:  TheNewNotUltimateAtAllZone
           ZoneMember: Domain 2, Port 63
```

config.zoning.showActive

Syntax

```
showActive
```

Purpose

This command shows the zoning configuration saved on the fabric.

Parameters

This command has no parameters.

Command Example

```
Root> config zoning showActive
```

Output

The zoning configuration data is displayed as a table that includes the following properties:

Active ZoneSet	The enabled status, name, and member zones of the zone set.

Output Example

The output from the `config.zoning.showActive` command displays as follows.

```
Active Zone Set
Default Zone Enabled:  False
ZoneSet:  TheUltimateZoneSet
    Zone:  TheUltimateZone
           ZoneMember: Domain 10, Port 6
           ZoneMember: Domain 15, Port 2
           ZoneMember: Domain 2, Port 63
           ZoneMember: 10:00:00:00:C9:22:9B:64
           ZoneMember: 10:00:00:00:C9:22:9B:BD
    Zone:  TheNotSoUltimateZone
           ZoneMember: 10:00:00:00:C9:22:9B:AB
           ZoneMember: 10:00:00:00:C9:22:9B:C6
           ZoneMember: 10:00:00:00:C9:22:9B:AB
    Zone:  TheNotUltimateAtAllZone
           ZoneMember: Domain 2, Port 63
```

maint Commands

The `maint` branch of the CLI command tree contains commands that relate to maintenance activities.

The commands in the `maint` branch can be used only by the administrator.

Note that the `maint.system.resetConfig` command resets all configuration data and non-volatile settings, including network information, to their default values (factory settings). Management access may be lost until the network information is restored.

maint.port.beacon

Syntax

```
beacon portNumber beaconState
```

Purpose

This command enables or disables port beaconing for a port.

Parameters

This command has two required parameters:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140
beaconState	Specifies whether unit beaconing is enabled. Valid values are `true` and `false`. Boolean *1* and *0* may be substituted as values.

Command Examples

```
Root> maint port beacon 4 false
Root> maint port beacon 4 0
```

maint.port.reset

Syntax

```
reset portNumber
```

Purpose

This command resets a port.

Description

This command resets an individual port without affecting any other ports. However, if a device is attached to the port and the device is online, the reset causes a link reset to occur. If the port is in a failed state (that is, after failing a loopback test), the reset restores the port to an operational state. The reset also clears all statistics counters and disables port beaconing for the specified port.

Parameters

This command has one parameter:

portNumber	Specifies the port number to be reset. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> maint port reset 4
```

maint.system.beacon

Syntax

```
beacon beaconState
```

Purpose

This command enables or disables unit beaconing.

Parameters

This command has one parameter:

beaconState	Specifies whether unit beaconing is enabled. Valid values are `true` and `false`. Boolean `1` and `0` may be substituted as values.

Command Examples

```
Root> maint system beacon false
Root> maint system beacon 0
```

maint.system.clearSysError

Syntax

```
clearSysError
```

Purpose

This command clears the system error light.

Parameters

This command has no parameters.

Command Example

```
Root> maint system clearSysError
```

maint.system.ipl

Syntax

```
ipl
```

Purpose

This command IPLs the switch.

Description

Connection to the command line interface is lost when this command runs.

Parameters

This command has no parameters.

Command Example

```
Root> maint system ipl
```

maint.system.resetConfig

Syntax

```
resetConfig
```

Purpose

This command resets all NVRAM configuration parameters to their default values, including feature keys and IP addresses.

Description

This command IPLs the switch. Connection from the CLI to the switch is lost when this command runs.

Note: This command resets all configuration data and non-volatile settings, including network information, to their default values (factory settings). Management access may be lost until the network information is restored.

The default values are set in the firmware of the director or edge switch. For information about the default values, refer to the service manual for your director or edge switch.

Parameters

This command has no parameters.

Command Example

```
Root> maint system resetConfig
```

maint.system.setOnlineState

Syntax

```
setOnlineState onlineState
```

Purpose

This command sets the switch online or offline.

Parameters

This command has one parameter:

onlineState	Specifies whether the switch is online. Valid values are `true` and `false`. Boolean `1` and `0` may be substituted as values.

Command Examples

```
Root> maint system setOnlineState true
Root> maint system setOnlineState 1
```

perf Commands

The `perf` branch of the CLI command tree contains commands that relate to performance services.

The commands in the `perf` branch can by used by either the administrator or the operator.

Note that the counters in `perf` command output are 32-bit values that wrap at 4,294,967,296. To calculate the full value of a counter, multiply 4,294,967,296 by the value in the wrap field, and add the resulting product to the value in the count field. For example, if a TxFrames statistic has a count value of 1842953 and a wrap value of 12, the full value of the counter is:

(4,294,967,296 x 12) + 1842953 = 51,541,450,505.

perf.class2

Syntax

```
class2 portNumber
```

Purpose

This command displays port Class 2 counters for a single port.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> perf class2 2
```

Output

The port Class 2 counter data is displayed as a table that includes the following statistics, along with a wrap count for each corresponding counter:

Port	The port number.
RxFrames	The number of Fibre Channel Class 2 frames that the port has received.
TxFrames	The number of Fibre Channel Class 2 frames that the port has transmitted.
RxWords	The number of Class 2 4-byte words within frames that the port has received.

TxWords	The number of Class 2 4-byte words within frames that the port has transmitted.
Busied Frms	The number of times that FBSY (Fabric Busy link response) was returned to this port as a result of a Class 2 frame that could not be delivered to the other end of the link. This occurs if either the fabric or the destination port is temporarily busy.
Rjct Frames	The number of times that FRJT (Frame Reject link response) was returned to this port as the result of a Class 2 frame that was rejected by the fabric.

Output Example

The output from the `perf.class2` command displays as follows.

```
Port 2
Statistic   Count      Wrap
----------- ---------- ----------
RxFrames    2953184    23
TxFrames    1842953    12
RxWords     2943184    65
TxWords     1842953    32
Busied Frms 2953184    0
Rjct Frames 1842953    0
```

perf.class3

Syntax

```
class3 portNumber
```

Purpose

This command displays port Class 3 counters for a single ports.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> perf class3 2
```

Output

The port Class 3 counter data is displayed as a table that includes the following statistics, along with a wrap count for each corresponding counter:

Port	The port number.
RxFrames	The number of Fibre Channel Class 3 frames that the port has received.
TxFrames	The number of Fibre Channel Class 3 frames that the port has transmitted.
RxWords	The number of Class 3 4-byte words within frames that the port has received.

TxWords	The number of Class 3 4-byte words within frames that the port has transmitted.
Disc Frames	The number of Class 3 frames that have been discarded upon receipt by this port. There are no FBSYs (Fabric Busy link response) or FRJTs (Frame Reject link response) generated for Class 3 frames.

Output Example

The output from the `perf.class3` command displays as follows.

```
Port 2
Statistic   Count       Wrap
----------- ---------- ----------
RxFrames    2953184    23
TxFrames    1842953    12
RxWords     2953184    65
TxWords     1842953    32
Disc Frames 2953184    26
```

perf.clearStats

Syntax

```
clearStats portNumber
```

Purpose

This command resets all port statistics for an individual port or for all ports.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: `0-15` for the Edge Switch 2/16 `0-23` for the Edge Switch 2/24 `0-31` for the Edge Switch 2/32 `0-63` for the Director 2/64 `0-127` and `132-143` for the Director 2/140 `all` for every port on the director or edge switch

Command Example

```
Root> perf clearStats 4
Root> perf clearStats all
```

perf.errors

Syntax

```
errors portNumber
```

Purpose

This command displays port error counters for a single port.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: `0-15` for the Edge Switch 2/16 `0-23` for the Edge Switch 2/24 `0-31` for the Edge Switch 2/32 `0-63` for the Director 2/64 `0-127` and `132-143` for the Director 2/140

Command Example

```
Root> perf errors 2
```

Output

The port error counter data is displayed as a table that includes the following statistics:

Port	The port number.
Prim Seq Err	The number of state machine protocol errors detected by the port hardware.

Disc Frms	The number of received frames discarded due to a frame size of less than size words or to frames dropped because the BB credit was zero. This number is counted during the first round of frame verification and applies to both Class 2 and Class 3 traffic.
Inv Tx Wrds	The number of 10-bit transmission words that the port is unable to map to 8-bit bytes because of disparity errors or misaligned K characters while in the OL2 or OL3 state.
CRC Errs	The number of frame CRC errors detected by the port.
Dlim Errs	The number of invalid frame delimiters (SOF or EOF) received by the port.
Addr Id Errs	The number of frames received with unknown addressing.

Output Example

The output from the `perf.errors` command displays as follows.

```
Port 2
Statistic    Count
-----------  ----------
Prim Seq Err 753452
Disc Frms    351269
Inv Tx Wrds  2953184
CRC Errs     1842953
Delim Errs   2953184
Addr Id Errs 1842953
```

perf.link

Syntax

```
link portNumber
```

Purpose

This command displays port link counters for a single ports.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> perf link 2
```

Output

The port link counter data is displayed as a table that includes the following statistics:

Port	The port number.
OLS In	The number of offline sequences initiated by the attached N_Port.
OLS Out	The number of offline sequences initiated by this director or edge switch port.
Reset In	The number of link resets initiated by the attached N_Port.

Reset Out	The number of link resets initiated by this director or edge switch.
LIPS In	The number of LIPS generated on this switch loop port.
LIPS Out	The number of times the port has detected a link error resulting from an invalid link state transition or timeout.
Link Flrs	The number of times the port has detected a link error resulting from an invalid link state transition or timeout.
Sync Losses	The number of times the port has detected a loss of synchronization timeout while not in an offline or LF2 state.
Sig Losses	The number of times the port has detected a loss of signal while not in an offline or LF2 state.

Output Example

The output from the `perf.link` command displays as follows.

```
Port 2
Statistic    Count
-----------  ----------
OLS In       753452
OLS Out      351269
Reset In     2953184
Reset Out    1842953
Link Flrs    2953184
Sync Losses  1842953
Sig Losses   35246
```

perf.openTrunking.backPressure

Syntax

```
backPressure backPressureState
```

Purpose

This command configures the Back Pressure state of the OpenTrunking configuration.

Parameters

This command has one parameter:

backPressureState	This parameter can be set to *enable* or *disable* OpenTrunking back pressure. Boolean *1* and *0* values may also be substituted. If the state is configured to be enabled, a back pressure entry is made to the Event Log and an SNMP trap is generated if SNMP is configured.

Command Example

```
Root> perf openTrunking backPressure 1
```

perf.openTrunking.congestionThresh

Syntax

```
congestionThresh portNumber congestionThreshold
```

Purpose

This command configures the congestion threshold for an individual port or for all ports.

Parameters

This command has the following parameters:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140 *all* applies the *congestionThreshold* value to every port on the product.
congestionThreshold	Specifies the congestion threshold in terms of a percentage. Valid values are integers in the range *1* to *99* or *default*. Specifying the value *default* sets the specified port to the default threshold level of 10.

Command Example

```
Root> perf openTrunking congestionThresh 8 20
```

perf.openTrunking.creditStarvThresh

Syntax

```
creditStarvThresh creditStarvationThreshold
```

Purpose

This command configures the Credit Starvation Threshold of the OpenTrunking configuration. Credit Starvation Threshold is defined as the percentage of time that no transmit BB_Credits are passed on the link. When the threshold value is exceeded, the system tries to reroute the flows that are going to the ISL that has the problem. Effectively, the threshold is the percent of the time that the port does not receive BB_Credits before traffic is rerouted away from the port.

This threshold is also used for prevention of improperly rerouting to an ISL from another ISL. In other words, the system does not reroute a flow to a link that is starved for BB_Credits even if that link is significantly under its loading threshold, and the system tries to reroute traffic away from a link that is starved, even if the threshold is significantly below the limit.

Parameters

This command has one parameter:

creditStarvationThreshold	Specifies the credit starvation threshold in terms of a percentage. Valid values are integers in the range *1* to *99* or *default*. Specifying the value *default* sets the parameter to the default threshold level of 10%.

Command Example

```
Root> perf openTrunking creditStarvThresh 20
```

perf.opentrunking.setState

Syntax

```
setState openTrunkingState
```

Purpose

This command sets the enabled state of the OpenTrunking feature. The OpenTrunking feature key must be installed in order to enable open trunking.

Parameters

This command has one parameter.

openTrunkingState	This parameter can be set to `enable` or `disable` the OpenTrunking feature. Boolean `1` and `0` may be substituted as values.

Command Example

```
Root> perf opentrunking setState 1
```

Note: This command has functionality that is identical to the config.features.opentrunking command, described on page 44.

perf.openTrunking.show

perf.openTrunking.show

Syntax

```
show portNumber
```

Purpose

This command displays the current OpenTrunking configuration per port.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> perf openTrunking show 11
```

Output

The OpenTrunking configuration data is displayed as a table that includes the following statistics:

Congestion Threshold	The threshold listed as a percentage. If the value is a default value, `(default)` is displayed next to the percentage.
Flows Rerouted To	Trunking statistic displaying flows rerouted to the specified port. (These statistics are cleared by the `perf.clearStats` command.)

Flows Rerouted From	Trunking statistic displaying flows rerouted from the specified port. (These statistics are cleared by the perf.clearStats command.)
Unresolved Congestion	The current enabled/disabled state of the unresolved congestion trunking feature. (The indicated state applies to every port on the product.)
Backpressure	The current enabled/disabled state of the backpressure trunking feature. (The indicated state applies to every port on the product.)
Credit Starvation	The current threshold setting of the credit starvation threshold trunking feature. If the value is a default value, `(default)` is displayed next to the percentage. (The indicated value applies to every port on the product.)

Output Example

The output from the `perf.openTrunking.show` command displays as follows.

```
Port Number:                       1
Congestion Threshold (%):          56
Flows Rerouted To:                 26739
Flows Rerouted From:               23987
Unresolved Congestion:             Enabled
Backpressure:                      Disabled
Low BB Credit Threshold (%):  50 (default)
```

perf.openTrunking.unresCongestion

Syntax

```
unresCongestion unresolvedCongestionState
```

Purpose

This command configures the Unresolved Congestion state of the OpenTrunking configuration. If the state is configured to be enabled, an unresolved congestion entry is made to the Event Log and an SNMP trap is generated if SNMP is configured.

Parameters

This command has one parameter:

unresolvedCongestionState	This parameter can be set to *enable* or *disable* the Unresolved Congestion state of the OpenTrunking configuration. Boolean *1* and *0* values may also be substituted.

Command Example

```
Root> perf openTrunking unresCongestion 1
```

perf.thresholdAlerts Commands

The `perf.thresholdAlerts` commands enable you to configure alerts that notify you of specific conditions on your system.

You can configure a total of 16 threshold alerts, including both counter threshold alerts (CTAs) and throughput threshold alerts (TTAs). For a list of the available threshold alerts counters, see Table 4.

The `perf.thresholdAlerts` commands are standard CLI features. They do not require a feature key.

In order to activate a threshold alert using the CLI, you must enter certain commands in a specific order. Enable a threshold alert using the following order:

1. Create a counter threshold alert using the perf.thresholdAlerts.counter.addAlert command, described on page 161. Use this command to create a name for the threshold alert that you can use in subsequent commands. The threshold alert must then be configured using the other counter threshold alert commands.
2. Associate the threshold alert counter with the threshold alert name using the perf.thresholdAlerts.counter.setCounter command, described on page 166.
3. Configure the threshold alert using other perf.threshold alert commands. For example, you should assign the threshold alert to a port using the command perf.thresholdAlerts.counter.addPort, described on page 162.
4. Once the alert is fully configured, it can be activated using the perf.thresholdAlerts.setState command, described on page 171. An alert cannot be modified unless it is in the disabled state.

Table 4: List of Threshold Alert Counters

Number	Threshold Alert Counter or Counter Set
1	Link Resets Sent
2	Link Resets Received
3	OLS Sent
4	OLS Received
5	Link Failures
6	Sync Losses
7	Signal Losses
8	Protocol Errors

Table 4: List of Threshold Alert Counters (Continued)

Number	Threshold Alert Counter or Counter Set
9	Invalid Tx Words
10	CRC Errors
11	Discarded Frames
12	Frames Too Short
13	Delimiter Errors
14	Address ID Errors
15	Class2BusiedFrames
16	Class2RejectedFrames
17	Class3DiscardedFrames
18	Physical Link Errors Set (see below)
19	Link Sequence Counts Set (see below)
20	Logical Link Errors Set (see below)

Description of Summed Sets

Some of the threshold alerts consist of groups of related items called *Summed Sets*. When any of the items in the summed set are encountered, the total value of the summed set counter is incremented. The items that make up the summed sets are:

- Physical Link Errors Summed Set
  - Link Failures
  - Sync Losses
  - Signal Losses
  - Protocol Errors
  - Invalid Tx Words
  - CRC Errors
  - Frames Too Short
  - Delimiter Errors

- Link Sequence Counts Summed Set
  - Link Resets Received
  - Link Reset Sent
  - OLS Received
  - OLS Sent
- Logical Link Errors Summed Set
  - Discarded Frames
  - Address ID Errors
  - Class 2 Busied Frames
  - Class 2 Rejected Frames
  - Class 3 Discarded Frames

perf.thresholdAlerts.counter.addAlert

Syntax

```
addAlert name
```

Purpose

This command configures a new counter threshold alert and assigns it a name. The new alert is assigned default settings which can then be changed using the other counter threshold alert commands.

The default settings for a new counter threshold alert are as follows:

- Ports: None
- Counter: None
- Increment: 100
- Interval: 60 minutes
- State: Disabled

Parameters

This command has one parameter:

name	Specifies the name of the new counter threshold alert. This name can consist of any ASCII characters up to a maximum length of 64 characters. To use spaces or special characters in this name, put quotation marks around the name. This parameter is case-sensitive.

Command Example

```
Root> perf thresholdAlerts counter addAlert checklinks
```

perf.thresholdAlerts.counter.addPort

Syntax

```
addPort name portNumber
```

Purpose

This command adds a port to the specified counter threshold alert.

Note: An alert cannot be modified unless it is in the disabled state.

Parameters

This command has the following parameters.

name	The name of a counter threshold alert as defined by the command perf.thresholdAlerts.counter.addAlert on page 161.

portNumber Specifies the port number or port type. Valid values are either a single port number, all ports, or port type. The following port numbers are valid:

0–15 for the Edge Switch 2/16

0–23 for the Edge Switch 2/24

0–31 for the Edge Switch 2/32

0–63 for the Director 2/64

0–127 and *132–143* for the Director 2/140

all applies the `congestionThreshold` value to every port on the product.

Specifying a port type removes all the ports from the alert and applies the alert to each port that is the specified type of port. Valid values are:

- *eport*
- *fport*
- *flport* (Edge Switch 2/24 only)

A counter threshold alert is not allowed to specify both port types and individual port numbers.

Command Example

```
Root> perf thresholdAlerts counter addPort checklinks 12
```

perf.thresholdAlerts.counter.deleteAlert

Syntax

```
deleteAlert name
```

Purpose

This command deletes a specified counter threshold alert.

Parameters

This command has one parameter:

name	The name of a counter threshold alert, as defined by the command perf.thresholdAlerts.counter.addAlert, described on page 161

Command Example

```
Root> perf thresholdAlerts counter deleteAlert checklinks
```

perf.thresholdAlerts.counter.removePort

Syntax

```
removePort name portNumber
```

Purpose

This command removes a port from the specified counter threshold alert.

Note: An alert cannot be modified unless it is in the disabled state.

Parameters

This command has the following parameters.

name	The name of a counter threshold alert as defined by the command perf.thresholdAlerts.counter.addAlert, described on page 161.
portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140 *all* applies the congestionThreshold value to every port on the product.

Command Example

```
Root> perf thresholdAlerts counter removePort checklinks 12
```

perf.thresholdAlerts.counter.setCounter

Syntax

```
setCounter name counterNumber
```

Purpose

This command sets the counter statistic that will be used to trigger the counter threshold alert. Use this command to associate a counter with the threshold alert name created using the perf.thresholdAlerts.setState command, described on page 171.

Parameters

This command has the following parameters:

name	The name of a counter threshold alert as defined by the command perf.thresholdAlerts.counter.addAlert, described on page 161.
counterNumber	Specifies the counter number. Valid values are shown in Table 4 on page 158.

Command Example

```
Root> perf thresholdAlerts counter setCounter checklinks 1
```

perf.thresholdAlerts.counter.setParams

Syntax

```
setParams name increment interval
```

Purpose

This command sets the increment and interval times for a specified counter threshold alert.

Note: An alert cannot be modified unless it is in the disabled state.

Parameters

This command has the following parameters:

name	The name of a counter threshold alert as defined by the command perf.thresholdAlerts.counter.addAlert, described on page 161.
increment	This sets the number of times a counter must increment during the interval period to trigger the alert. Acceptable values are in the range of *1* to *70,560*.
interval	This sets the interval time in minutes for the alert. Acceptable values are in the range of *5* to *70,560* minutes.

Example

The meaning for each of these inputs can best be described using the following example sentence:

If ports 0, 1, or 2 CRC Error counter increments more then 5 times within a period of 30 minutes, send an alert. Where:

```
Port list           = 0, 1, 2
CTA Counter         = CRCErrors
Increment value     = 5
Interval Time       = 30 minutes
```

The increment value takes place in an interval that is a fixed length amount of time. This interval is not a rolling window interval.

Command Example

```
Root> perf thresholdAlerts counter setParams checklinks 5 30
```

perf.thresholdAlerts.counter.show

Syntax

```
show name
```

Purpose

This command displays the settings for an individual counter threshold alert.

Parameters

This command has one parameter:

name	The name of a threshold alert as defined by the command perf.thresholdAlerts.counter.addAlert, described on page 161.

Command Example

```
Root> perf thresholdAlerts counter show checklinks
```

Output Example

The output from the `perf.thresholdAlerts.counter.show` command displays as follows.

```
Index:              3
Name:               Example_CRC_Error_Finder
Ports:              2,4-7,20-24
Counter Statistic:  CRC Errors
Increment:          5
Interval:           30
Alert State:        Disabled
```

perf.ThreshAlerts.counter.showStatisticTable

Syntax

```
showStatisticTable
```

Purpose

This command displays the table of different statistic counters that can be added to a counter threshold alert. This table is used for reference only.

Parameters

This command has no parameters.

Command Example

```
Root> perf ThreshAlerts counter showStatisticTable
```

Output Example

The output from the `showStatisticTable` command displays as follows.

```
Number    Counter or Counter Set
------    ----------------------
1         Link Resets Sent
2         Link Resets Received
3         OLS Sent
4         OLS Received
5         Link Failures
6         Sync Losses
7         Signal Losses
8         Protocol Errors
9         Invalid Tx Words
10        CRC Errors
11        Discarded Frames
12        Frames Too Short
13        Delimiter Errors
14        Address ID Errors
15        Cls2 BusiedFrms
16        Cls2 RejectedFrms
17        Cls3 DiscardFrms
18        Phys Lnk Err Set
19        Lnk Seq Cnt Set
20        Logic Lnk Err Set
```

perf.thresholdAlerts.setState

Syntax

```
setState name enabledState
```

Purpose

This command sets the enabled state of the specified counter threshold alert.

Parameters

This command has the following parameters:

name	The name of a counter threshold alert as defined by the command perf.thresholdAlerts.counter.addAlert, described on page 161.
enabledState	Sets the counter threshold alert enabled state. Valid values are *enabled* and *disabled*. Boolean *1* and *0* values may also be substituted.

Command Example

```
Root> perf thresholdAlerts setState checklinks enabled
```

perf.traffic

Syntax

```
traffic portNumber
```

Purpose

This command displays port traffic counters for a single port.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: *0–15* for the Edge Switch 2/16 *0–23* for the Edge Switch 2/24 *0–31* for the Edge Switch 2/32 *0–63* for the Director 2/64 *0–127* and *132–143* for the Director 2/140

Command Example

```
Root> perf traffic 2
```

Output

The port traffic counter data is displayed as a table that includes the following statistics, along with a wrap count for each corresponding counter:

Port	The port number.
Rx%	The received link utilization percentage.
Tx%	The transmitted link utilization percentage.
RxFrames	The number of Fibre Channel Class 2 and Class 3 frames that the port has received.

TxFrames	The number of Fibre Channel Class 2 and Class 3 frames that the port has transmitted.
RxWords	The number of 4-byte words in Class 2 and Class 3 frames that the port has received.
TxWords	The number of 4-byte words in Class 2 and Class 3 frames that the port has transmitted.

Output Example

The output from the `perf.traffic` command displays as follows.

```
Port 2
Statistic    Count       Wrap
-----------  ----------  ----------
Rx%          75          N/A
Tx%          30          N/A
RxFrames     2953184     23
TxFrames     1842953     12
TxWords      2953184     65
TxWords      1842953     32
```

show Commands

The `show` branch of the CLI command tree contains commands that display, but do not change, stored data values. The displayed output that results from these commands is not necessarily identical with the output from the `show` commands that are within the other CLI command tree branches, for example, `config.port.show`.

The commands in the `show` branch can by used either by the Administrator or the Operator.

show.eventLog

Syntax

```
eventLog [clear]
```

Purpose

This command shows the contents of the event log as maintained in NVRAM on the director or edge switch.

Parameters

This command has one parameter:

clear	This optional parameter causes all reroute log entries to be cleared.

Command Example

```
Root> show eventLog
```

Output

The event log data are displayed as a table that includes the following properties:

Date/Time	The date and time when the event occurred.
Code	The event reason code.
Severity	The severity of the event. The values are: `Major` — Unit operational (major failure). `Minor` — Unit operational (minor failure). `Severe` — Unit not operational. The causes are either the switch contains no operational SBAR cards or the system shuts down due to CTP thermal threshold violations. `Info` — Unit operational (information only).

FRU	The FRU and FRU position, where applicable.
Event Data	The 32-byte hexidecimal description of the event in words.

Output Example

The output from the `show.eventLog` command displays as follows:

```
Date/Time         Code   Severity  FRU    Event Data
---------         ----   -------   -----  ----------------------------------
04/12/01 10:58A   375    Major     CTP-0  00010203 04050607 08090A0B 0C0D0E0F
04/12/01 9:58A    385    Severe    CTP-0  00010203 04050607 08090A0B 0C0D0E0F
04/11/01 7:18P    395    Severe    CTP-0  00010203 04050607 08090A0B 0C0D0E0F
```

show.features

Syntax

```
features
```

Purpose

This command displays a table of all installed feature sets and their states. This command provides the same output as the config.features.show command, described on page 45.

Parameters

This command has no parameters.

Command Example

```
Root> show features
```

Output

The features data is displayed as a table that includes the following properties:

Installed Feature Set	The feature set installed using a feature key. Only installed keys are displayed.
Feature	Individual features within each set. In many cases, there is only one feature within each feature set.
State	The state of the individual feature. Fabric-wide features are displayed as `Active`/`Inactive`. Switch-centric features are displayed as `Enabled`/`Disabled`.

Output Example

The output from the `show.features` command displays as follows:

```
Installed Feature Set          Feature              State
---------------------------------------------       ----
Open Systems Management ServerOSMS                  Enabled
Flex Ports                     8 Flex Ports         Enabled
SANtegrity                     Fabric Binding       Active
SANtegrity                     Switch Binding       Enabled
SANtegrity                     Enterprise Fabrics   Active
Open Trunking                  Open Trunking        Enabled
```

show.frus

Syntax

```
frus
```

Purpose

This command displays information about all FRUs.

Parameters

This command has no parameters.

Command Example

```
Root> show frus
```

Output

The FRU information is displayed as a table that includes the following properties:

FRU	The FRU name. This property may show `Unknown` or `Not Installed` if the FRU is not installed.
Position	The relative position of the FRU, that is, its slot.
State	The state of the FRU. Values are: ■ `Active`—the current module is active. ■ `Backup`—this module is not currently being used, but it is available for immediate failover. ■ `Failed`—the current module is failed.
Serial Num	The serial number of the FRU. (This field is blank for the power supply modules of the Edge Switch 2/24.)
Part Num	The part number of the FRU.
Beaconing	The beaconing state of the FRU (on or off).
Pwr On Hrs	The power-on hours value for the FRU.

Output Example

The output from the `show.frus` command displays as follows:

```
FRU       Position  State   Serial Num  Part Num      Beacon Pwr  On Hrs
--------  --------  ------  ----------  ------------  --------    ------
CTP       0         Backup  81440005    254136-001      off        4512
CTP       1         Active  81440011    254136-001      off        4512
SBAR      0         Active  21109984    254133-001      off        8616
SBAR      1         Backup  21101442    254133-001      off        8616
Power     0         Active  22044540    254137-001      off        8616
Power     1         Active  22044548    254137-001      off        8616
Fan       0         Active                              off        0
Fan       1         Active                              off        0
Backplane 0         Active  21050137    254131-001      off        8616
UPM       0         Active  82060705    292006-001      off        1464
UPM       1         Active  82060627    292006-001      off        1464
UPM       2         Active  82060959    292006-001      off        1457
UPM       3         Active  82060621    292006-001      off        1464
UPM       4         Active  82060632    292006-001      off        1464
UPM       5         Active  82060694    292006-001      off        1458
UPM       6         Active  82063621    292006-001      off        1458
UPM       7         Active  82060639    292006-001      off        1456
UPM       8         Active  82051711    292006-001      off        1455
UPM       9         Active  82051779    292006-001      off        1469
UPM       10        Active  82060969    292006-001      off        1454
UPM       11        Active  82051819    292006-001      off        1455
UPM       12        Active  82060660    292006-001      off        1456
UPM       13        Active  82051743    292006-001      off        1471
UPM       14        Active  82063560    292006-001      off        1456
UPM       15        Active  82051815    292006-001      off        1471
```

show.ip.ethernet

Syntax

```
ethernet
```

Purpose

This command displays ethernet attributes.

Parameters

This command has no parameters.

Command Example

```
Root> show ip ethernet
```

Output

The Ethernet attributes data are displayed as a table that includes the following properties:

IP Address	The IP address for the Ethernet adapter as set in the `config.ip.ethernet` command.
Gateway Address	The gateway address for the Ethernet adapter as set in the `config.ip.ethernet` command.
Subnet Mask	The subnet mask for the Ethernet adapter as set in the `config.ip.ethernet` command.

Output Example

The output from the `show.ip.ethernet` command displays as follows:

```
LAN Information
IP Address:       144.49.10.15
Gateway Address:  144.49.10.1
Subnet Mask:      255.255.255.0
```

show.loginServer

Syntax

```
loginServer
```

Purpose

This command displays information from the login server database for devices attached to this switch.

Note: It is possible to have more than one device per port for any public loop devices attached to an FL Port.

Parameters

This command has no parameters.

Command Example

```
Root> show loginServer
```

Output

The device information is displayed as a table that includes the following properties:

Port	The port number where the device is attached.
BB Crdt	The maximum number of remaining frames that can be transmitted without causing a buffer overrun condition at the receiver.
RxFldSz	The buffer-to-buffer receive data field size from the FLOGI received from the attached N_Port.
COS	The class of service (for example, 1; 2; 3; 4; 5; 6; F; 1,2; 2,3).
Port Name	The port World Wide Name of the attached device.
Node Name	The node World Wide Name of the attached device.

Output Example

The output from the `show.loginServer` command displays as follows.

```
Port BB Crdt  RxFldSz  COS  Port Name                Node Name
---- -------  -------  ---  ----------------------  ----------------------
0    10                2,3  00:11:22:33:44:55:00:77  20:11:22:33:44:55:66:77
1    10                2    00:11:22:33:44:55:00:78  20:11:22:33:44:55:66:78
4    10                2,3  00:11:22:33:44:55:00:79  20:11:22:33:44:55:66:79
7    10                2,3  00:11:22:33:44:55:00:80  20:11:22:33:44:55:66:80
8    10                2    00:11:22:33:44:55:00:81  20:11:22:33:44:55:66:81
10   10                2,3  00:11:22:33:44:55:00:82  20:11:22:33:44:55:66:82
11   10                2,3  00:11:22:33:44:55:00:83  20:11:22:33:44:55:66:83
12   10                3    00:11:22:33:44:55:00:84  20:11:22:33:44:55:66:84
13   10                2,3  00:11:22:33:44:55:00:85  20:11:22:33:44:55:66:85
15   10                2,3  00:11:22:33:44:55:00:86  20:11:22:33:44:55:66:86
```

show.nameServer

Syntax

```
nameServer
```

Purpose

This command displays information from the name server database for devices attached to this switch.

Note: It is possible to have more than one device per port for any public loop devices attached to an FL Port.

Parameters

This command has no parameters.

Command Example

```
Root> show nameServer
```

Output

The device information data is displayed as a table that includes the following properties:

Type	The type (N, NL, F/NL, F, FL, E, B).
Port Id	The 24-bit Fibre Channel address.
Port Name	The port World Wide Name of the attached device.
Node Name	The node World Wide Name of the attached device.
COS	The class of service (for example, 1; 2; 3; 4; 5; 6; F; 1,2; 2,3).
FC4 Types	The FC4 types registered for this device. One or more numbers display in this field. The numbers in this field correspond to the list at the bottom of the table.

Output Example

The output from the `show.nameServer` command displays as follows.

```
Type  Port Id  Port Name                Node Name                COS FC4 Types
----   -------  -----------------------  -----------------------  --- ----------
N     010400   00:11:22:33:44:55:66:77  20:11:22:33:44:55:66:77  2,3  2
N     010500   00:11:22:33:44:55:66:78  20:11:22:33:44:55:66:78  2,3  0
N     010600   00:11:22:33:44:55:66:79  20:11:22:33:44:55:66:79  2,3  2
N     010700   00:11:22:33:44:55:66:80  20:11:22:33:44:55:66:80  2    2
N     010800   00:11:22:33:44:55:66:81  20:11:22:33:44:55:66:81  3    2
N     010900   00:11:22:33:44:55:66:82  20:11:22:33:44:55:66:82  3    2
N     010C00   00:11:22:33:44:55:66:83  20:11:22:33:44:55:66:83  2,3  2
N     010D00   00:11:22:33:44:55:66:84  20:11:22:33:44:55:66:84  2,3  2
N     010E00   00:11:22:33:44:55:66:85  20:11:22:33:44:55:66:85  2    5
N     010F00   00:11:22:33:44:55:66:86  20:11:22:33:44:55:66:86  2    4
N     011200   00:11:22:33:44:55:66:87  20:11:22:33:44:55:66:87  2,3  2
N     011300   00:11:22:33:44:55:66:88  10:11:22:33:44:55:66:88  2,3  2

FC4 Types
0: ISO/IEC 8802-2 LLC
1: ISO/IEC 8802-2 LLC/SNAP
2: SCSI-FCP
3: SCSI-GPP
4: IPI-3 Master
5: IPI-3 Slave
6: IPI-3 Peer
7: CP IPI-3 Master
8: CP IPI-3 Slave
9: CP IPI-3 Peer
10: SBCCS-Channel
11: SBCCS-Control Unit
12: FC-SB-2 Channel to Control Unit
13: FC-SB-2 Control Unit to Channel
14: Fibre Channel Service
15: FC-FG
16: FC-SW
17: FC-AL
18: SNMP
19: HIPPI-FP
20: Vendor Unique
```

show.nameServerExt

Syntax

```
nameServerExt
```

Purpose

This command displays extended information from the name server database for devices attached to this switch. The command provides symbolic nameserver information, as well as the same information as the `show.nameServer` command. Multiple devices per port are possible for any public loop device attached to an FL Port.

Note: Because it contains symbolic nameserver information that can be lengthy, the CLI output wraps several times per node. For this reason, this command is supported only in comma-delimited mode.

Parameters

This command has no parameters.

Command Example

```
Root> show nameServerExt
```

Output

The device information data is displayed as a table that includes the following properties:

Type	The type (N, NL, F/NL, F, FL, E, B).
Port Id	The 24-bit Fibre Channel address.
Port Name	The port World Wide Name of the attached device.
Node Name	The node World Wide Name of the attached device.
COS	The class of service (for example, 1; 2; 3; 4; 5; 6; F; 1,2; 2,3).

FC4 Types	The FC4 types registered for this device. One or more numbers display in this field. The numbers in this field correspond to the list in the output example for show.nameServer on page 184.
SymNodeName	255-character representation of the Symbolic Node Name.
SymPortName	255-character representation of the Symbolic Port Name.

Output Example

The output from the `show.nameServerExt` command displays as follows.

```
Type, Port Id, Port Name, Node Name, COS, FC4 Types, SymNodeName, SymPortName,
N,  010400, 00:11:22:33:44:55:00:77, 20:11:22:33:44:55:66:77, 2-3, 2, Node Name A, Port Name A,
N,  010500, 00:11:22:33:44:55:01:77, 20:11:22:33:44:55:66:77, 2-3, 0, This Is Symbolic Node Name
B,  Symbolic Port Name B Is Slightly Longer
N,  010600, 00:11:22:33:44:55:66:02, 20:11:22:33:44:55:66:77, 2-3, 2, , ,
FL, 000001, 00:11:22:33:44:55:66:03, 20:11:22:33:44:55:66:77, 2, 0, Loop Node 1, Loop Port 7
FL, 000002, 00:11:22:33:44:55:66:04  20:11:22:33:44:55:66:77, 3, 2, Loop Node 2, Loop Port 7,
```

show.openTrunking.config

Syntax

```
config
```

Purpose

This command displays the trunking configuration for all ports.

Parameters

This command has no parameters.

Command Example

```
show openTrunking config
```

Output

The device information data is displayed as a table that includes the following properties.

Unresolved Congestion	The current enabled/disabled state of the unresolved congestion trunking feature.
Backpressure	The current enabled/disabled state of the backpressure trunking feature.
Credit Starvation	The current threshold setting of the credit starvation threshold trunking feature shown as a percentage. If this value is configured to be the default, `(default)` is displayed alongside the threshold value. The default value is 75%.
Congestion Threshold Table	A table mapping each port number on the switch to a corresponding threshold setting. The threshold is listed as a percentage. If this value is configured to be the default, `(default)` is displayed alongside the threshold value. The default value is 60%

Output Example

The output from the `show.openTrunking.config` command displays as follows.

```
Unresolved Congestion:            Enabled
Backpressure:                     Disabled
Low BB Credit Threshold (%):  50 (default)
Port  Threshold %
----  ------------
1     60 (default)
2     69
3     60 (default)
4     60 (default)
5     90
...
```

show.openTrunking.reroutelog

Syntax

```
reroutelog [clear]
```

Purpose

This command displays the trunking reroute log information.

Parameters

This command has one parameter:

clear	This optional parameter causes all reroute log entries to be cleared. The *clear* parameter also clears the log entries for the HAFM.

Command Example

```
show opentrunking reroutelog
```

Output

The device information data is displayed as a table that includes the following properties:

Date/Time	The date/time when the rerouting event occurred.
Rcv	The port associated with the flow that was rerouted.
Dom	The target domain associated with the flow that was rerouted.
Old	The exit port number on this switch that the flow used to get to the target domain.
New	The exit port number on this switch that the flow now uses to get to the target domain.

Output Example

The output from the `show.opentrunking.reroutelog` command displays as follows.

```
Date/Time        RcvPort  Dom  OldExit  NewExit
---------------  -------  ---  -------  -------
04/12/01 10:58A  63       2    41       42
03/23/02 12:01P  4        3    35       36
```

show.port.config

Syntax

```
config
```

Purpose

This command shows the port configuration for all ports.

Parameters

This command has no parameters.

Command Example

```
Root> show port config
```

Output

The port configuration attributes are displayed as a table that includes the following properties:

Port	The port number.
Name	The name of the port as set in the `config.port.name` command.
Blocked	The blocked state of the port as set in the `config.port.blocked` command.
Ext Dist	The extended distance state as set in the `config.port.extDist` command. (This does not apply to the Edge Switch 2/24.)
FAN	The configured fabric address notification (FAN) state. (Edge Switch 2/24 only.)
Type	The port type as set in the `config.port.type` command.
Speed	The port speed as set in the `config.port.speed` command.

Output Example

The output from the `show.port.config` command displays as follows:

```
Port  Name                     Blocked  Ext Dist Type   Speed
----  -----------------------  -------  -------- -----  ---------
0     Port 1                   false    false    fPort  1 Gb/sec
1     Port 2                   true     true     fPort  1 Gb/sec
2     Port 3                   false    false    gPort  1 Gb/sec
3     Port 4                   false    false    fPort  2 Gb/sec
4     Port 5                   true     true     fPort  2 Gb/sec
5     Port 6                   false    false    fPort  2 Gb/sec
6     Port 7                   true     true     fPort  1 Gb/sec
7     Port 8                   false    false    fPort  Negotiate
8     Port 9                   false    true     fPort  1 Gb/sec
9     Port A                   false    false    fPort  1 Gb/sec
10    Port B                   false    false    fPort  2 Gb/sec
11    Port C                   false    false    fPort  2 Gb/sec
12    Port D                   false    false    fPort  1 Gb/sec
13    Port E                   false    false    fPort  1 Gb/sec
14    Port F                   false    false    fPort  1 Gb/sec
15    Port X                   false    false    fPort  1 Gb/sec
```

show.port.info

Syntax

```
info
```

Purpose

This command displays port information for all ports.

Parameters

This command has no parameters.

Command Example

```
Root> show port info
```

Output

The port information data is displayed as a table that includes the following properties:

Port	The port number.
WWN	The World Wide Name of the port.
OpSpeed	The current operating speed (`1.0625` Gbps, `2.125` Gbps, or `Not Established`).
SpeedCap	The current transceiver capability speed (`1.0625` or `2.125` Gbps).

Output Example

The output from the `show.port.info` command displays as follows.

```
Port  WWN                       OpSpeed   SpeedCap
----  ------------------------  --------  --------
0     10:00:80:00:11:22:33:44  1 Gb/sec  2 Gb/sec
1     10:00:80:01:11:22:33:44  1 Gb/sec  2 Gb/sec
2     10:00:80:02:11:22:33:44  1 Gb/sec  2 Gb/sec
3     10:00:80:03:11:22:33:44  1 Gb/sec  2 Gb/sec
4     10:00:80:04:11:22:33:44  2 Gb/sec  2 Gb/sec
5     10:00:80:05:11:22:33:44  2 Gb/sec  2 Gb/sec
6     10:00:80:06:11:22:33:44  2 Gb/sec  2 Gb/sec
7     10:00:80:07:11:22:33:44  2 Gb/sec  2 Gb/sec
```

```
8     10:00:80:08:11:22:33:44  2 Gb/sec  2 Gb/sec
9     10:00:80:09:11:22:33:44  2 Gb/sec  2 Gb/sec
10    10:00:80:10:11:22:33:44  1 Gb/sec  2 Gb/sec
11    10:00:80:11:11:22:33:44  1 Gb/sec  2 Gb/sec
12    10:00:80:12:11:22:33:44  1 Gb/sec  2 Gb/sec
13    10:00:80:13:11:22:33:44  1 Gb/sec  2 Gb/sec
14    10:00:80:14:11:22:33:44  1 Gb/sec  2 Gb/sec
15    10:00:80:15:11:22:33:44  1 Gb/sec  2 Gb/sec
```

show.port.nodes

Syntax

```
nodes portNumber
```

Purpose

This command displays the loop node list for a specified port. This command is valid only on the Edge Switch 2/24.

Parameters

This command has one parameter:

portNumber	Specifies the port number. Valid values are: *0–23* for the Edge Switch 2/24

Command Example

```
Root> show port nodes portNumber
```

Output

The port data is displayed as a table that includes the following properties:

PC Addr	The Fibre Channel address of nodes attached to this port. Private devices are assigned address strings of 0000 followed by the two-digit hexadecimal Arbitrated Loop Physical Address (ALPA), instead of the 6-digit hexadecimal number presented for public devices.
Attached WWN	The WWN of nodes attached to this port, or the string `NOT LOGGED IN` for a private loop device.
Class	The Class value for public devices. This field is left blank for private devices.
Data Field Size	The Data Field Size value for public devices. This field is left blank for private devices.

Output Example

The Data Field Size value for public devices. This field is left blank for private devices.

```
FC Addr  Attached WWN             Class  Data Field Size
-------  -----------------------  -----  ---------------
610A01   33:00:00:00:00:00:00:03  1      2112
610A02   33:00:00:00:00:00:00:04  1      2112
610A04   33:00:00:00:00:00:00:05  1      2112
610A08   33:00:00:00:00:00:00:02  1      2112
610A0F   33:00:00:00:00:00:00:0A  1      2112
610A10   33:00:00:00:00:00:00:10  1      2112
000017   NOT LOGGED IN
000018   NOT LOGGED IN
00001B   NOT LOGGED IN
```

If no nodes are on the loop, a message displays saying that no loop nodes are on the port.

show.port.status

Syntax

```
status
```

Purpose

This command displays port status for all ports.

Parameters

This command has no parameters.

Command Example

```
Root> show port status
```

Output

The port status data is displayed as a table that includes the following properties:

Port	The port number.
State	The port state. For example: ■ Segmented E_Port ■ Invalid Attachment ■ Not Installed ■ Online ■ Offline ■ Not Operational ■ No Light ■ Testing ■ Port Failure ■ Link Reset ■ Inactive

Type	The operational port type. If the configured port type is F_Port or E_Port, this value will match the configured type. If the configured type is G_Port, this value can be E_Port, F_Port, or G_Port, depending on what is connected to the port. On the Edge Switch 2/24, if the configured port type is Fx_Port, the operational port type can include FL_Port in addition to the values noted above for F_Port. If the configured port type is Gx_Port, then the operational port type can include FL_Port in addition to the values noted above for G_Port.
Attached WWN	The World Wide Name of the device or switch attached to the port, if one is attached.
Beaconing	The beaconing state for the port (true or false).
Reason	An optional message number that indicates if the port has a segmented ISL or if a port binding violation has occurred, or if the part is inactive. The message description for this message number is provided at the bottom of the table. If the operational state is `Segmented E_Port`, only the following messages can be generated: ■ 01 Segment Not Defined ■ 02 Incompatible Operating Parameters ■ 03 Duplicate Domain ID(s) ■ 04 Incompatible Zoning Configurations ■ 05 Build Fabric Protocol Error ■ 06 No Principal Switch ■ 07 No Response from Attached Switch ■ 08 ELP Retransmission Failure Timeout

If the operational state is `Invalid Attachment`, only the following messages can be generated:

- 09 Unknown
- 10 ISL connection not allowed on this port
- 11 ELP rejected by the attached switch
- 12 Incompatible switch at other end of the ISL
- 13 External loopback adapter connected to the port
- 14 N_Port connection not allowed on this port
- 15 Non-HP switch at other end of the ISL
- 16 ISL connection not allowed on this port
- 17 ISL connection not allowed to external Fabrics
- 18 Port binding violation—unauthorized WWN
- 19 Unresponsive Node Connected to Port
- 20 Incompatible security attributes
- 21 Fabric Binding violation
- 22 Authorization failure
- 23 Switch Binding violation

If the operational state is `Inactive` only the following messages can be generated:

- 24 Inactive – RC 0
- 25 No Serial Number
- 26 Feature Not Enabled
- 27 Switch Speed Conflict

Output Example

The output from the `show.port.status` command displays as follows.

```
Port State              Type   Attached WWN             Beaconing  Reason
---- ----------------   -----  -----------------------  ---------  ------
0    Online             fPort  10:00:80:00:11:22:33:44  Off
1    Online             gPort  10:00:80:00:11:22:33:45  On
2    No Light           fPort  10:00:80:00:11:22:33:55  On
3    Offline            ePort  10:00:80:00:11:22:33:00  Off
4    Online             gPort  10:00:80:00:11:22:33:57  Off
5    Port Failure       fPort  10:00:80:00:11:22:33:46  Off
6    Link Reset         gPort  10:00:80:00:11:22:33:63  Off
7    Segmented E_Port   ePort  10:00:80:00:11:22:33:47  Off         02
8    Online             ePort  10:00:80:00:11:22:33:88  Off
9    Offline            fPort  10:00:80:00:11:22:33:49  Off
10   Inactive           ePort  10:00:80:00:11:22:33:50  Off         26
11   Online             fPort  10:00:80:00:11:22:33:53  Off
12   No Light           fPort  10:00:80:00:11:22:33:56  Off
13   Online             fPort  10:00:80:00:11:22:33:59  Off
14   Invalid Attachment fPort  10:00:80:00:11:22:33:64  Off         15
15   Online             fPort  10:00:80:00:11:22:33:66  Off

02: Duplicate Domain ID(s)
03: Switch Speed Conflict
07: ISL connection not allowed on this port
```

show.port.technology

Syntax

```
technology
```

Purpose

This command shows the port technology information for all ports.

Parameters

This command has no parameters.

Command Example

```
Root> show port technology
```

Output

The port technology data is displayed as a table that includes the following properties:

Port	The port number.
Connectr	The port connector type (LC, MT_RJ, MU, Internal).
Transcvr	The transceiver type (Long LC, Short, Short OFC, Long LL, Long Dist).
Distance	The distances supported (Short, Intermediate, Long, Very Long).
Media	The media type (M-M 62.5um, M-M 50um, M-M 50,62.5um, S-M 9um, Copper).

Output Example

The output from the `show.port.technology` command displays as follows:

```
Port Connectr Transcvr  Distance     Media
---- -------- --------- ------------ -----------
0    LC       Long LC   Long         M-M 50um
1    LC       Long LC   Long         M-M 50um
2    LC       Long LC   Long         M-M 50um
3    MT_RJ    Long LC   Long         M-M 50um
4    MT_RJ    Long LC   Long         M-M 50um
5    MT_RJ    Long LC   Long         M-M 50um
6    LC       Long LC   Long         M-M 50um
7    LC       Long LC   Long         M-M 50um
8    LC       Long LC   Long         M-M 50um
9    LC       Long LC   Long         M-M 50um
10   LC       Long LC   Long         M-M 50um
11   LC       Long LC   Long         M-M 50um
12   LC       Long LC   Long         M-M 50um
13   LC       Long LC   Long         M-M 50um
14   LC       Long LC   Long         M-M 50um
15   LC       Long LC   Long         M-M 50um
```

show.security.fabricBinding

Syntax

```
fabricBinding
```

Purpose

This command displays the fabric binding configuration saved on the fabric. The command performs the same function as `config.security.fabricBinding.showActive` command.

Parameters

This command has no parameters.

Command Example

```
Root> show security fabricBinding
```

Output

The fabric binding configuration data is displayed as a table that includes the following properties:

Fabric Binding State	The active fabric binding state: `Inactive` or `Active Restricting`
Fabric Membership List	The active Fabric Membership List.

Output Example

The output from the `show.security.fabricBinding` command displays as follows:

```
Fabric Binding State:   Active Restricting
Domain 1  (00:11:22:33:44:55:66:77
Domain 2  (88:99:AA:BB:CC:DD:EE:FF
Domain 14 (11:55:35:45:24:78:98:FA)
```

show.security.portBinding

Syntax

```
portBinding
```

Purpose

This command shows the port binding configuration for all ports.

Parameters

This command has no parameters.

Command Example

```
Root> show security portBinding
```

Output

The port binding configuration data is displayed as a table that includes the following properties:

Port	The port number.
WWN Binding	The state of port binding for the specified port (`active` or `inactive`).
Bound WWN	The WWN of the device that is bound to the specified port. If this field is blank, no device is bound to the specified port.

Output Example

The output from the `show.security.portBinding` command displays as follows:

```
Port      WWN Binding      Bound WWN
----      -----------      ----------------------
0         Active           AA:00:AA:00:AA:00:AA:00
1         Inactive         00:00:00:00:00:00:00:00
2         Inactive         CC:33:44:55:CC:33:44:55
3         Active           00:00:00:00:00:00:00:00
4         Inactive         00:00:00:00:00:00:00:00
5         Inactive         00:00:00:00:00:00:00:00
6         Inactive         00:00:00:00:00:00:00:00
7         Inactive         00:00:00:00:00:00:00:00
8         Inactive         00:00:00:00:00:00:00:00
9         Inactive         00:00:00:00:00:00:00:00
10        Inactive         00:00:00:00:00:00:00:00
11        Inactive         00:00:00:00:00:00:00:00
12        Inactive         00:00:00:00:00:00:00:00
13        Inactive         00:00:00:00:00:00:00:00
14        Inactive         00:00:00:00:00:00:00:00
15        Inactive         00:00:00:00:00:00:00:00
```

show.security.switchBinding

Syntax

```
switchBinding
```

Purpose

This command displays the switch binding configuration.

Parameters

This command has no parameters.

Command Example

```
Root> show security switchBinding
```

Output

The switch binding configuration data is displayed as a table that includes the following properties:

Switch Binding State	The switch binding state, which can have the following values: `Disabled`, `Enabled and Restricting F_Ports`, `Enabled and Restricting E_Ports`, or `Enabled and Restricting All Ports`
Switch Membership List	The active Switch Membership List.

Output Example

The output from the `show.security.switchBinding` command displays as follows:

```
Switch Binding State:   Enabled and Restricting E Ports
00:11:22:33:44:55:66:77
88:99:AA:BB:CC:DD:EE:FF
11:55:35:45:24:78:98:FA
```

show.switch

Syntax

```
switch
```

Purpose

This command displays switch attributes.

Parameters

This command has no parameters.

Command Example

```
Root> show switch
```

Output

The switch attributes data is displayed as a table that includes the following properties:

State	The state of the switch. For example: ■ online ■ offline
BB Credit	The BB credit as set in the `config.switch.bbCredit` command.
R_A_TOV	The R_A_TOV as set in the `config.switch.raTov` command.
E_D_TOV	The E_D_TOV as set in the `config.switch.edTov` command.
Preferred Domain Id	The domain ID as set in the `config.switch.domainId` command.
Switch Priority	The switch priority as set in the `config.switch.priority` command.

Speed	The switch speed as set in the `config.switch.speed` command. (This does not apply to the Edge Switch 2/24.)
Rerouting Delay	The rerouting delay as set in the `config.switch.rerouteDelay` command.
Operating Mode	The operating mode (Open Systems or S/390). This attribute cannot be configured through the CLI.

Note: The Operating Mode parameter is equivalent to the Management Style parameter of the HAFM interface. The S/390 Mode is equivalent to the FICON management style on the HAFM. The Open Systems mode is equivalent to Open Systems management style for the HAFM.

Interop Mode	The interoperability mode as set in the `config.switch.interopMode` command.
Active Domain Id	The active domain ID of the switch. This ID may or may not be the same as the preferred domain ID.
World Wide Name	The World Wide Name for the switch.
Insistent Domain Id	Configured Insistent domain ID state as set in the `config.switch.insistDomainId` command.
Domain RSCN	Configured Domain RSCN state as set in the `config.switch.domainRSCN` command.
Zoning RSCN	Configured Zoning RSCN state as set in the `config.switch.zoningRSCN` command.

Output Example

The output from the `show.switch` command displays as follows.

```
Switch Information
   State:               Online
   BB Credit:           2
   R_A_TOV:             20
   E_D_TOV:             4
   Preferred Domain Id: 1
   Switch Priority:     Default
   Speed:               2 Gb/sec
   Rerouting Delay:     Enabled
   Operating Mode:      Open Systems
   Interop Mode:        Open Fabric 1.0
   Active Domain Id:    1
   World Wide Name:     10:00:08:00:88:00:21:07
   Insistent Domain Id: Enabled
   Domain RSCN:         Enabled
   Zoning RSCN:         Enabled
```

show.system

Syntax

```
system
```

Purpose

This command displays a set of system attributes.

Parameters

This command has no parameters.

Command Example

```
Root> show system
```

Output

The system attributes are displayed as a table that includes the following properties:

Name	The system name as set in the `config.system.name` command.
Description	The system description as set in the `config.system.description` command.
Contact	The system contact as set in the `config.system.contact` command.
Location	The system description as set in the `config.system.description` command.
`Date/Time`	The system date and time as set in the `config.system.date` command.
Serial Number	The serial number for the system.
Type Number	The type number for the system.
Model Name	The name for the system (for example, Edge Switch 2/24).
Model Number	The model number for the system. All products have the model number 001, except 1-Gb sheet metal units, which have the model number 002.

EC Level	The engineering change level installed.
Firmware Version	The current firmware version installed.
Beaconing	The enabled state of unit beaconing (enabled or disabled) as set in the `maint.system.beacon` command.

Output Example

The output from the `show.system` command displays as follows.

```
System Information
   Name:              hp3 director
   Description:       hp StorageWorks director 2/64
   Contact:           Joe
   Location:          Everywhere
   Date/Time:         04/16/2001  10:34:01AM
   Serial Number:     123456789
   Type Number:       1
   Model Number;      director 2/64
   EC Level:          1
   Firmware Version:01.03.00 34
   Beaconing:         Disabled
```

show.thresholdAlerts.alert

Syntax

```
alert
```

Purpose

This command provides the name, type, and enabled state of each threshold alert. This command displays information about all threshold alerts, including both counter threshold alerts (CTAs) and throughput threshold alerts (TTAs).

Parameters

This command has no parameters.

Command Example

```
Root> show thresholdAlerts alert
```

Output

The threshold alert data displays as a table that includes the following properties:

Name	The name of the threshold alert, truncated to 45 characters.	
Type	The trigger statistic or threshold type of the alert (abbreviated to 17 characters). These include:	
	Tx Util	TTA - Transmit Utilization
	Rx Util	TTA - Receive Utilization
	Tx/Rx Util	TTA - Transmit or Receive Utilization
	Link Resets Sent	CTA - Link Resets Sent
	Link Resets Received	CTA - Link Resets Received
	OLS Sent	CTA - OLS Sent
	OLS Received	CTA - OLS Received
	Link Failures	CTA - Link Failures
	Sync Losses	CTA - Sync Losses

	Signal Losses	CTA - Signal Losses
	Protocol Errors	CTA - Primitive Sequence Errors/Protocol Errors
	Invalid Tx Words	CTA - Invalid Tx Words
	CRC Errors	CTA - CRC Errors
	Discarded Frames	CTA - Discarded Frames
	Frames Too Short	CTA - Frames Too Short
	Delimiter Errors	CTA - Delimiter Errors
	Address ID Errors	CTA - Address ID Errors
	Cls2 BusiedFrms	CTA - Class 2 Busied Frames
	Cls2 RejectedFrms	CTA - Class 2 Rejected Frames
	Cls3 DiscardFrms	CTA - Class 3 Discarded Frames
	Phys Lnk Err Set	CTA - Physical Link Errors Summed Set
	Lnk Seq Cnt Set	CTA - Link Sequence Counts Summed Set
	Logic Lnk Err Set	CTA - Logical Link Errors Summed Set
State	The enabled state of the CTA, either *enabled* or *disabled*.	

Output Example

The output from the `show.thresholdAlerts.alert` command displays as follows.

```
Name                           Type               State
-----------------------------  -----------------  ------
Throughput Threshold #1        Rx Util            Enable
Threshold for CRC              CRC Errors         Disabled
Safety #2                      Logic Lnk Err Set  Enabled
Safety #1                      Cls2 BusiedFrms    Disabled
```

show.thresholdAlerts.log

Syntax

```
log [clear]
```

Purpose

This command shows the contents of the threshold alert log. This log shows all the threshold alerts that have been triggered, including both counter threshold alerts (CTAs) and throughput threshold alerts (TTAs).

Parameters

This command has one parameter.

clear	This optional parameter causes all reroute log entries to be cleared.

Command Example

```
Root> show thresholdAlerts log
```

Output

The threshold alert log data displays as a table that includes the following properties:

Date/Time	The date and time of the alert.	
Name	The name of the threshold alert, truncated to 22 characters.	
Port	The type of threshold alert (CTAs only).	
Type	The trigger statistic or threshold type of the alert (abbreviated to 17 characters). These include:	
	Tx Util	TTA - Transmit Utilization
	Rx Util	TTA - Receive Utilization
	Tx/Rx Util	TTA - Transmit or Receive Utilization
	Link Resets Sent	CTA - Link Resets Sent

	Link Resets Received	CTA - Link Resets Received
	OLS Sent	CTA - OLS Sent
	OLS Received	CTA - OLS Received
	Link Failures	CTA - Link Failures
	Sync Losses	CTA - Sync Losses
	Signal Losses	CTA - Signal Losses
	Protocol Errors	CTA - Primitive Sequence Errors/Protocol Errors
	Invalid Tx Words	CTA - Invalid Tx Words
	CRC Errors	CTA - CRC Errors
	Discarded Frames	CTA - Discarded Frames
	Frames Too Short	CTA - Frames Too Short
	Delimiter Errors	CTA - Delimiter Errors
	Address ID Errors	CTA - Address ID Errors
	Cls2 BusiedFrms	CTA - Class 2 Busied Frames
	Cls2 RejectedFrms	CTA - Class 2 Rejected Frames
	Cls3 DiscardFrms	CTA - Class 3 Discarded Frames
	Phys Lnk Err Set	CTA - Physical Link Errors Summed Set
Value	The increment or utilization value of the alert.	
Interval	The time interval of the alert.	

Output Example

The output from the `show.thresholdAlerts.log` command displays as follows.

```
Date/Time          Name            Port   Type                Value  Int
----------------  -------------  -----  ------------------  -----  ---
05/26/02  10:58A  CTA Alert #4   2      Cls3 DiscardFrms    250     10
05/24/02  12:01A  CTA Alert #4   2      Cls3 DiscardFrms    250     10
05/22/02  10:58A  My test CTA    43     CRC Errors          35      30
05/20/02  08:01P  TTA Test #3    2      Tx Util             85     120
03/01/02  02:58A  CTA Alert #1   130    CRC Errors          100     60
```

show.zoning

Syntax

```
zoning
```

Purpose

This command shows the zoning configuration saved on the fabric.

Parameters

This command has no parameters.

Command Example

```
Root> show zoning
```

Output

The zoning configuration data is displayed as a table that includes the following properties:

Active ZoneSet	The enabled status, name, and member zones of the zone set.

Output Example

The output from the `show.zoning` command displays as follows.

```
Active Zone Set
Default Zone Enabled:  False
ZoneSet:  TheUltimateZoneSet
    Zone:  TheUltimateZone
           ZoneMember: Domain 10, Port 6
           ZoneMember: Domain 15, Port 2
           ZoneMember: Domain 2, Port 63
           ZoneMember: 10:00:00:00:C9:22:9B:64
           ZoneMember: 10:00:00:00:C9:22:9B:BD
    Zone:  TheNotSoUltimateZone
           ZoneMember: 10:00:00:00:C9:22:9B:AB
           ZoneMember: 10:00:00:00:C9:22:9B:C6
           ZoneMember: 10:00:00:00:C9:22:9B:AB
    Zone:  TheNotUltimateAtAllZone
           ZoneMember: Domain 2, Port 63
```

Error Messages

This appendix lists and explains error messages for the command line interface (CLI). Any error numbers that are not listed are reserved for future use.

The message that is returned is a string that includes the error number and the text of the message.

Table 5: CLI Error Messages

Message	Description	Action
Error 05: Busy	The switch is busy or processing another request.	After a few seconds, reissue the request.
Error 08: Invalid Switch Name	The value entered for the switch name is invalid.	The name for a director or edge switch can contain 0–24 characters. Enter a name with 0–24 characters. If spaces are used, enclose the name in quotation marks.
Error 09: Invalid Switch	The value entered for the switch description is invalid.	The description for the director or edge switch can contain 0–255 characters. Enter a description with 0–255 characters. If spaces are used, enclose the description in quotation marks.
Error 10: Invalid Switch Location	The value entered for the switch location is invalid.	The location for the director or edge switch can contain 0–255 characters. Enter a location with 0–255 characters. If spaces are used, enclose the location in quotation marks.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 11: Invalid Switch Contact	The value entered for the switch contact is invalid.	The contact for the director or edge switch can contain 0–255 characters. Enter a contact with 0–255 characters. If spaces are used, enclose the contact in quotation marks.
Error 13: Invalid Port Number	The value entered for the port number is invalid.	Enter a port number within the range supported by the director or edge switch. Valid values are: ■ 0–15 for the Edge Switch 2/16 ■ 0–23 for the Edge Switch 2/24 ■ 0–31 for the Edge Switch 2/32 ■ 0–63 for the Director 2/64 ■ 0–127 and 132–143 for the Director 2/140
Error 14: Invalid Port Name	The value entered for the port name is invalid.	The port name for the individual port can contain 0–24 characters. Enter a name with 0–24 characters. If spaces are used, enclose the name in quotation marks.
Error 15: Invalid BB Credit	The value entered for the buffer-to-buffer credit is invalid.	The buffer-to-buffer credit must be an integer in the range 1–60. Enter a value in the range 1–60 characters. A buffer-to-buffer credit is not used for ports configured for extended distance.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 16: Invalid R_A_TOV	The value entered for the resource allocation time-out value is invalid.	The R_A_TOV is entered in tenths of a second and must be an integer in the range 10–1200 (1 second to 120 seconds). The R_A_TOV value must be larger than the E_D_TOV value. Check to be sure that all these conditions are met and re-submit.
Error 17: Invalid E_D_TOV	The value entered for the error detect time-out value is invalid.	The E_D_TOV is entered in tenths of a second and must be an integer in the range 2–600 (0.2 second to 60 seconds). The E_D_TOV value must be smaller than the R_A_TOV value. Check to be sure that all these conditions are met and re-submit.
Error 18: Invalid TOV	The E_D_TOV and R_A_TOV values are not compatible.	Enter a valid E_D_TOV/R_A_TOV combination. The E_D_TOV must be smaller than the R_A_TOV.
Error 20: Invalid Preferred Domain ID	The value entered for the preferred domain ID for the director or edge switch is invalid.	The preferred domain ID must be an integer in the range 1–31. Enter an appropriate value and resubmit.
Error 21: Invalid Switch Priority	The value entered for the switch priority is invalid.	The switch priority entered for the director or switch must be `principal`, `default`, or `neverprincipal`. (Refer to the description of the command, config.switch.priority on page 100.) Enter `principal`, `default`, or `neverprincipal`.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 29: Invalid Gateway Address	The value entered for the gateway address is invalid.	The new gateway address for the Ethernet interface must be entered in dotted decimal format (for example, 0.0.0.0). Enter the gateway address for the Ethernet interface in the dotted decimal format.
Error 30: Invalid IP Address	The value entered for the IP address of the director or edge switch is invalid.	The IP address for the Ethernet interface must be entered in dotted decimal format (for example, 10.0.0.0). Enter the IP address for the Ethernet interface in dotted decimal format.
Error 31: Invalid Subnet Mask	The value entered for the new subnet mask for the Ethernet interface is invalid.	The subnet mask must be entered in dotted decimal format (for example, 255.0.0.0). Enter the subnet mask for the Ethernet interface in dotted decimal format.
Error 32: Invalid SNMP Community Name	The value entered for the SNMP community name is invalid.	The SNMP community name is the name of the community specified in the `config.snmp.addCommunity` command. The community name must not exceed 32 characters. Valid characters include all those in the ISO Latin-1 character set. Duplicate community names are allowed, but the corresponding writeAuthorization values must match. Enter an SNMP community name that meets all of the requirements.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 33: Invalid SNMP Trap Address	The value entered for the SNMP trap address is invalid.	The new SNMP trap address for the SNMP interface must be entered in dotted decimal format (for example, 10.0.0.0). Enter an SNMP trap address that meets the requirements.
Error 34: Duplicate Community Names Require Identical Write Authorization	The two or more entered community names are identical, but their corresponding write authorizations are not identical.	Enter different values for the community names, or enter identical write authorizations for the duplicate community names.
Error 37: Invalid Month	The value of the month entered for the new system date is invalid.	The format of the *date* parameter must be mm:dd:yyyy or mm/dd/yyyy. The month must contain an integer in the range 01–12. Enter a date, including a month in the range 01–12.
Error 38: Invalid Day	The value of the day entered for the new system date is invalid.	The format of the *date* parameter must be mm:dd:yyyy or mm/dd/yyyy. The day must contain an integer in the range 01–31. Enter a date, including a day in the range 01–31.
Error 39: Invalid Year	The value of the year entered for the new system date is invalid.	The format of the *date* parameter must be mm:dd:yyyy or mm/dd/yyyy. The year must contain an integer greater than 1980. Enter a date, including a year greater than 1980.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 40: Invalid Hour	The value of the hour entered for the new system time is invalid.	The format of the *time* parameter must be hh:mm:ss. The hour must contain an integer in the range 00–23. Enter a time, including an hour in the range 00–23.
Error 41: Invalid Minute	The value of the minute entered for the new system time is invalid.	The format of the *time* parameter must be hh:mm:ss. The minute must contain an integer in the range 00–59. Enter a time, including minutes in the range 00–59.
Error 42: Invalid Second	The value of the second entered for the new system time is invalid.	The format of the *time* parameter must be hh:mm:ss. The second must contain an integer in the range 00–59. Enter a time, including seconds in the range 00–59.
Error 44: Max SNMP Communities Defined	A new SNMP community cannot be defined before removing an existing community from the list.	A total of six communities may be defined for SNMP. Remove at least one of the current communities, and then define the new community.
Error 45: Not Allowed While Switch Online	The entered command requires that the director or edge switch be set offline.	Set the director or switch offline before reentering the command.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 55: Invalid Zone Name	The value entered for the zone name is invalid.	The zone name must contain 1–64 characters. Valid characters are ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789$-^_ (spaces are not permitted, and the first character must be alphabetical). Enter a zone name in the range of 1–64 characters, using the valid characters.
Error 57: Duplicate Zone	Two or more zone names in the zone set are identical.	All zone names within a zone set must be unique. Enter a zone name that does not duplicate the name of another zone within the zone set.
Error 59: Zone Name in Use	Two or more zone names in the zone set are identical.	All zone names within a zone set must be unique. Enter a zone name that does not duplicate the name of another zone within the zone set.
Error 60: Invalid Number of Zone Members	The entered command tried to add more zone members than the zone can hold.	Delete one or more zone members in the zone, and then resubmit the command to add the new zone member.
Error 61: Invalid Zone Member Type	The specified zone member is neither a World Wide Name (WWN) nor a domain-port pair.	The zone member type must be either a World Wide Name (WWN) or a domain-port pair. Refer to config.zoning.addWwnMem on page 124 or config.zoning.addPortMem on page 125 for specific requirements. Enter either a WWN or domain-port pair that meets the requirements.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 62: Invalid Zone Set Name	The value entered for the zone set name is invalid.	The zone set name must contain 1–64 characters. Valid characters are ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789$-^_ (spaces are not permitted, and the first character must be alphabetical). Enter a zone set name in the range of 1–64 characters, using the valid characters.
Error 69: Duplicate Port Name	Two or more port names are identical.	Port names must be unique. The name must contain 1–24 characters. Enter a port name in the range of 1–24 characters.
Error 70: Invalid Device Type	The specified FRU does not exist on this product.	Refer to the product service manual for product-specific FRU information.
Error 71: FRU Not Installed	The specified FRU is not installed.	Refer to the product service manual for product-specific FRU information and procedures.
Error 72: No Backup FRU	The FRU cannot be swapped because a backup FRU is not installed.	Refer to the product service manual for product-specific FRU information and procedures. Insert a backup FRU, and reenter the command.
Error 73: Port Not Installed	The specified port is not installed on the product.	Refer to the product service manual for information about installing a port optic.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 74: Invalid Number of Zones	The specified zone set contains less than one zone or more than the maximum number of zones allowed for this product.	The zone set must contain at least one zone. Add or remove zones to stay within the required number of zones for this product.
Error 75: Invalid Zone Set Size	The specified zone set exceeds the NVRAM limitations of the director or edge switch.	Reduce the size of the zone set to meet the NVRAM limitations of the product. Reduce the number of zones in the zone set, reduce the number of members in a zone, or reduce the zone name lengths.
Error 76: Invalid Number of Unique Zone Members	The specified zone contains more than the maximum number of zone members allowed per zone set for this product.	Reduce the number of members in the zone before reentering the command.
Error 77: Not Allowed While Port Is Failed	The specified port is in a failed or inactive state or requires service.	Refer to the product service manual for the appropriate action.
Error 78: System Error Light On	This product cannot beacon because the system error light is on.	Refer to the product service manual for the appropriate procedure. Clear the system error light before enabling beaconing.
Error 79: FRU Failed	The specified FRU has failed.	Refer to the product service manual for the appropriate procedure.
Error 81: Default Zone Enabled	The request cannot be completed because the default zone is enabled.	Disable the default zone before reentering the command.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 82: Invalid Interop Mode	The value entered for the interoperability mode is not valid.	The interoperability mode for the director or edge switch must be Homogenous Fabric or Open Fabric 1.0. Enter `mcdata` (Homogenous Fabric) or `open` (Open Fabric 1.0) to set the interoperability mode.
Error 83: Not Allowed in Open Fabric Mode	This request cannot be completed while this switch is operating in Open Fabric 1.0 mode.	Configure the interoperability mode to Open Fabric 1.0 mode.
Error 88: Invalid Feature Key Length	The value of the specified feature key is longer than the maximum length allowed.	Refer to config.features.installKey on page 42 for requirements, and reenter the feature key. If problems persist, contact your sales representative.
Error 89: Not Allowed in S/390 Mode Without the SANtegrity™ Feature	This procedure is not allowed in S/390 mode (FICON management style in HAFM).	The entered command is only supported when the product is in Open Systems mode (Open Systems management style in HAFM). The product cannot be taken out of S/390 mode (FICON management style) through the CLI. Use the *HAFM* application to change the product management style, and then reenter the command.
Error 90: Invalid Port Type	The configured port type is invalid.	The port may be configured as an E_Port, G_Port, or F_Port. Reconfigure the port, and then resubmit the command.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 91: E_Port Type Configured	Ports cannot be configured as E_Ports in S/390 mode (FICON management style in HAFM).	Reconfigure the port as either an F_Port or a G_Port, and then resubmit the command.
Error 92: Not Allowed While Port Is Unblocked	The port must be blocked to complete this request.	Block the port, and then resubmit the command.
Error 93: Not Allowed While FICON MS Is Installed	This request cannot be completed because FICON Management Server is installed.	This action is not supported. No action necessary.
Error 94: Invalid Feature Combination	The requested features cannot be installed at the same time on one director or edge switch.	Contact your sales representative.
Error 99: Preferred Domain ID Cannot Be Zero	This switch cannot be configured to have a preferred domain ID equal to zero (0).	Enter an integer in the range 1–31 for the preferred domain ID.
Error 101: Command Not Supported on This Product	This product does not support the specified command.	Information only message: this operation is not supported.
Error 102: Switch Not Operational	The request cannot be completed because the switch is not operational.	Refer to the product service manual, and consult your service representative.
Error 115: Invalid Switch Speed	The request cannot be completed because the switch is not capable of operating at the configured speed.	Refer to the product service manual to determine the speed capabilities of the product.
Error 116: Switch Not Capable of 2 Gbps	The request cannot be completed because the switch is not capable of operating at 2.125 gigabits per second (Gbps).	Refer to the product service manual to determine the speed capabilities of the product.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 117: Ports Cannot be Set at Higher Data Rate than Switch Speed	The request cannot be completed because the requested port speed is faster than the configured switch speed.	The switch speed should first be configured to accommodate changes in the configured port speed. The ports cannot operate at a faster rate than the switch itself. Update the switch speed and resubmit the request. For more information about setting speeds, see config.switch.speed on page 105 and config.port.speed on page 57.
Error 118: Invalid Port Speed	This request cannot be completed because the requested port speed is not recognized for this product.	Port speeds may be set to 1 Gbps or 2 Gbps. Update the port speed and resubmit the request.
Error 119: Switch Speed Not 2 Gb/sec	This request cannot be completed because the switch speed has no been set to 2 Gbps.	The switch speed must be set to 2 Gbps in order to accommodate a port speed of 2 Gbps. Update the switch speed and resubmit the request.
Error 134: Invalid Membership List	Generic message to indicate a problem in either the Switch Binding or Fabric Binding Membership List.	Be sure that the membership list submitted does not isolate a switch already in the fabric. If this is not the case, the user needs to be aware of all fabric security rules and make sure that the list submitted adheres appropriately.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 135: Invalid Number of Fabric Membership List Entries	The number of fabric members submitted exceeds the maximum allowable entries of 31.	The number of entries in the Fabric Membership List is limited to the total number of domain IDs available to the fabric. Make sure that the list (including the managed switch) contains no more than 31 entries.
Error 136: Invalid Number of Switch Membership List Entries	The number of switch members submitted exceeds the maximum allowable entries of 256.	The number of entries in the Switch Membership List is limited to 256. Make sure that the list (including the managed switch) contains no more than 256 entries.
Error 137: Invalid Fabric Binding State	The fabric binding state submitted is not recognized by the CLI.	The fabric binding state must be set either to inactive or restrict. For more information, see config.security.fabricBinding Commands on page 61.
Error 138: Invalid Switch Binding State	The switch binding state submitted is not recognized by the CLI.	The switch binding state must be set to one of the following: `disable`, `erestrict`, `frestrict`, or `allrestrict`. For more information, see config.security.switchBinding Commands on page 78.
Error 139: Insistent Domain ID's Must Be Enabled When Fabric Binding Active	The user attempted to disable insistent domain IDs while fabric binding was active.	Insistent domain IDs must remain enabled while fabric binding is active. If fabric binding is set to inactive, the insistent domain ID state may be changed. It should be noted, however, that this can be disruptive to the fabric.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 140: Invalid Insistent Domain ID State	The request cannot be completed because an invalid insistent domain ID state has been submitted.	The insistent domain ID state must be set to either `enable` or `disable`. For more information, see config.switch.insistDomainId on page 96.
Error 141: Invalid Enterprise Fabric Mode	The request cannot be completed because an invalid Enterprise Fabric Enterprise Fabric mode has been submitted.	The Enterprise Fabric mode must be set to either `activate` or `deactivate`. For more information, see config.features.enterpriseFabMode on page 40.
Error 142: Invalid Domain RSCN State	The request cannot be completed because an invalid domain RSCN state has been submitted.	The domain RSCN state must be set to either `enable` or `disable`. For more information, see config.switch.domainRSCN on page 95.
Error 143: Domain RSCNs Must Be Enabled When Enterprise Fabric Mode Active	The user attempted to disable domain RSCNs while Enterprise Fabric mode was active.	Domain RSCNs must remain enabled while the Enterprise Fabric mode is active. If Enterprise Fabric mode is set to inactive, the domain RSCN state may be changed. It should be noted, however, that this can be disruptive to the fabric.
Error 144: The SANtegrity Feature Has Not Been Installed	The user attempted to activate a change to the fabric security configuration without first installing the SANtegrity feature key.	If this key has not been installed, contact your sales representative.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 146: Fabric Binding May Not Be Deactivated While Enterprise Fabric Mode Active	The user attempted to deactivate fabric binding while Enterprise Fabric mode was active.	Fabric binding must be active while operating in Enterprise Fabric mode. The fabric binding state may be changed if Enterprise Fabric mode is deactivated. It should be noted, however, that this can be disruptive to the fabric.
Error 148: Not Allowed While Switch Offline	The switch must be online to complete this request.	Change the state of the switch to `ONLINE` and re-submit the request.
Error 149: Not Allowed While Enterprise Fabric Mode Enabled and Switch Active	The request cannot be completed while the switch is online and Enterprise Fabric mode is Active.	This operation will be valid if the switch state is set to `OFFLINE` and Enterprise Fabric mode to `inactive`. It should be noted, however, that this can be disruptive to the fabric.
Error 151: Invalid Open Systems Management Server State	The request cannot be completed because the OSMS state submitted is invalid.	The OSMS state may be set to either `enable` or `disable`. For more information, see config.features.OpenSysMS on page 43.
Error 152: Invalid FICON Management Server State	The request cannot be completed because the FICON MS state submitted is invalid.	The FICON MS state may be set to either `enable` or `disable`. For more information, see config.features.ficonms on page 41.
Error 153: Feature Key Not Installed	The request cannot be completed because the required feature key has not been installed to the firmware.	Contact your sales representative.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 154: Invalid Membership List WWN	The request cannot be completed because the WWN does not exist in the switch binding membership list.	Make sure that the WWN deleted matches the WWN in the Switch Membership List. Make appropriate changes and re-submit the request.
Error 155: Cannot Remove Active Member From List	This member cannot be removed from the fabric security list because it is currently logged in.	Fabric security rules prohibit any device or switch from being isolated from the fabric via a membership list change. If it is truly the intention of the user to remove the device in question from the membership list, then there are several approaches to take. This request may be completed most non-disruptively by blocking the port (or physically removing the device from the managed switch) to which this device is attached and resubmitting the request.
Error 156: Cannot Complete while Switch is Online and Fabric Binding is Active	The switch must be offline and fabric binding must be inactive before this feature can be disabled.	Deactivating this feature can be disruptive to fabric operations. Take the switch offline and deactivate fabric binding before disabling this feature.
Error 201: Change Authorization Request Failed	The switch did not accept the request to make a change to NVRAM.	Check that all the parameters are correct, and reenter the command. If problems persist, contact your service representative.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 202: Invalid Change Authorization ID	The switch will not accept a change request from this particular client.	Check that all the parameters are correct, and reenter the command. If problems persist, contact your service representative.
Error 203: Another Client Has Change Authorization	Another user is currently making changes to this switch.	Check that all the parameters are correct, and reenter the command.
Error 207: Change Request Failed	The switch did not accept the request.	Check that all the parameters are correct, and reenter the command. If problems persist, contact your service representative.
Error 208: Change Request Timed Out	The authorization time allowed to make NVRAM changes has expired.	Check that all the parameters are correct, and reenter the command. If problems persist, contact your service representative.
Error 209: Change Request Aborted	The switch did not accept the request.	Check that all the parameters are correct, and reenter the command. If problems persist, contact your service representative.
Error 210: Busy Processing Another Request	A different switch in the fabric was busy processing another request and could not complete the command.	Check that all the parameters are correct, and reenter the command. If problems persist, contact your service representative.
Error 211: Duplicate Zone	The entered command tried to add a zone name that already exists in the local zone set.	All zone names must be unique. Delete or rename the zone with the duplicate name before reentering the command; or change the name of the new zone, and reenter the command.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 212: Duplicate Zone Member	The entered command tried to add a member that already exists in the zone.	No action required
Error 213: Number of Zones Is Zero	The config.zoning.activateZoneSet command tried to activate a zone set contained in the work area to the fabric; however, the zone set is empty.	A zone set must have at least one zone to be a valid zone set. Add at least one zone to the zone set, and then reenter the config.zoning.activateZoneSet command to activate the zone set in the work area to the fabric.
Error 214: A Zone Contains Zero Members	The config.zoning.activateZoneSet command tried to activate the zone set contained in the work area to the fabric; however, the zone set contains at least one zone that is empty.	Each zone in the zone set must contain at least one zone member. Add zone members so that each zone has at least one zone member; then reenter the config.zoning.activateZoneSet command to activate the zone set in the work area to the fabric.
Error 215: Zone Set Size Exceeded	The size of the local work-area zone set has outgrown the size supported by the CLI.	Reduce the size of the zone set to meet CLI requirements by doing one or more of the following: ■ reduce the number of zones in the zone set ■ reduce the number of members in a zone ■ reduce the length of zone names

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 218: Invalid Port Number	The value specified for the port number is invalid.	Enter a port number within the range supported by the director or edge switch. Valid values are: ■ 0–15 for the Edge Switch 2/16 ■ 0–23 for the Edge Switch 2/24 ■ 0–31 for the Edge Switch 2/32 ■ 0–63 for the Director 2/64 ■ 0–127 and 132–143 for the Director 2/140
Error 219: Invalid Port Type	The value specified for the port type is invalid.	A port may be configured as an E_Port, a G_Port, or an F_Port. Make sure the port is configured appropriately and resubmit the command. The Fx_port and Gx_port types are also supported on the Edge Switch 2/24.
Error 222: Invalid SNMP Community Index	The value specified for the SNMP community index is invalid.	The SNMP community index must be an integer in the range 1–6. Enter an integer in the range 1–6.
Error 223: Unknown Error	The switch did not accept the request.	Contact your service representative.
Error 224: Invalid Argument	The values entered for one or more parameters of the command are invalid. For example, a letter may have been entered where an integer is required.	Refer to Chapter 2 for information about the commands and their parameters. Check that all values for the parameters meet the CLI requirements, and then reenter the command.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 225: Argument Does Not Contain All USASCII Characters	The CLI received one or more non-USASCII characters.	Refer to Chapter 2 for information about the command parameters. Check that all parameters are typed correctly, and then resubmit the command.
Error 226: Argument Is Too Long	One or more parameters of the specified command are invalid.	Refer to Chapter 2 for information about the command parameters. Check that all parameters are typed correctly, and resubmit the command.
Error 227: Invalid SNMP Community Name	The value specified for the SNMP community name is invalid.	The community name must not exceed 32 characters in length. Duplicate community names are allowed if the corresponding write authorizations match. Specify a valid SNMP community name, and resubmit the command.
Error 228: Invalid Write Authorization Argument	The *writeAuthorization* parameter does not contain a valid value.	Parameters must be typed exactly to specification to be recognized correctly by the CLI. For more information, see config.snmp.addCommunity on page 88.
Error 229: Invalid UDP Port Number	The *udpPortNum* parameter does not contain a valid value.	Parameters must be typed exactly to specification to be recognized correctly by the CLI. For more information, see config.switch.insistDomainId on page 96.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 230: Invalid WWN	The *WWN* parameter does not contain a valid value.	For the appropriate parameters, see the section of the manual that corresponds to the attempted command. Parameters must be typed exactly to specification to be recognized correctly by the CLI.
Error 231: Invalid Port Number	The value specified for the *portNumber* parameter is invalid.	Refer to Chapter 2 for information about the commands with the *portNumber* parameter. Specify a valid port number value, and resubmit the command.
Error 232: Invalid Domain ID	The value specified for the *domainId* parameter is invalid. For example, the *domainId* parameter of the `config.switch.prefDomainId` command requires an integer in the range 1–31.	Refer to Chapter 2 for information about the commands with the *domainId* parameter. Specify a valid domain ID value, and resubmit the command.
Error 233: Invalid Member	The value specified for the *zoneName* parameter (the name of the zone member) is invalid.	Refer to Chapter 2 for information about the commands with the *zoneName* parameter. Specify a valid name for the zone member, and resubmit the command.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 234: Invalid Command	The CLI cannot associate an action with the submitted command. The command may be misspelled, required parameters may be missing, or the request may not be applicable to the branch of the CLI tree from which it was submitted.	Refer to Chapter 2 for the correct command syntax and spelling. Ensure that the command is spelled correctly and that all required parameters are included with the command. Refer to Navigation of the CLI Command Tree on page 25. Ensure that the command has been entered at the right place in the CLI command tree, and then resubmit the command.
Error 235: Unrecognized Command	The CLI does not recognize the submitted command and cannot perform the `help (?)` command as requested.	Refer to Using the Command Line Interface Help on page 33 for information about the help command. Refer to Chapter 2 for the correct spelling of the submitted command. Ensure that the command is spelled correctly. Refer to Navigation of the CLI Command Tree on page 25. Ensure that the command has been entered at the right place in the CLI command tree, and then resubmit the command.
Error 236: Ambiguous Command	The CLI does not recognize the submitted command issued.	The CLI cannot interpret the command because a unique match cannot be identified. For the appropriate syntax, see the section of the manual that corresponds to the attempted command. Enter the complete command and resubmit.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 237: Invalid Zoning Database	An unidentifiable problem with the zone set in the local work area occurred.	Check that all the parameters of the command are valid, and resubmit the command. If the problem persists, clear and then reconstruct the zone set.
Error 238: Invalid Feature Key	The specified feature key is invalid.	Check that the feature key is entered correctly, and resubmit the command. If the problem persists, contact your service representative. The message that is returned is a string that includes both the error number and the text of the message.
Error 239: Fabric binding entry not found	The user requested to remove a fabric binding entry that is not in the pending Fabric Membership List.	Verify that the correct entry (both WWN and Domain ID) is being requested for removal from the list and re-submit the request.
Error 240: Duplicate fabric binding member	The user requested to add an entry to the Fabric Binding List that is already a member of the list.	Verify that the correct entry (both WWN and Domain ID) is being requested for addition to the list and re-submit the request.
Error 241: Comma-delimited mode must be active	Comma-delimited mode must be active to execute this command.	Some commands require that comma-delimited mode be active (for example, show.nameServerExt. Enable comma-delimited mode and re-issue the command.
Error 242: Open trunking threshold % value must be 0–99	An invalid threshold percentage has been entered.	The Open trunking threshold must be in the range 0–99. Make sure all values are valid and resubmit the request.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 243: Not allowed while S/390 Mode is Enabled	This operation is not allowed while S/390 mode (FICON management style in HAFM) is enabled.	This command is not valid for the S/390 environment (FICON management style in HAFM).
Error 244: Not allowed while Enterprise Fabric Mode is Active and Switch is Online	This operation is not allowed while the switch is in Enterprise Fabric mode and the switch is online.	Make sure Enterprise Fabric mode is not enabled and the switch is offline.
Error 245: Invalid increment value	The increment value specified is not between 1 and 70560.	Make sure the increment value given is between 1 and 70560.
Error 246: Invalid interval value	The interval value specified is not between 5 and 70560 minutes.	Make sure the increment value given is between 5 and 70560 minutes.
Error 247: Invalid counter number	The counter specified is not a valid number.	Use the table shown by the command `perf.counterThreshAlerts.showStatisticsTable` to find a valid counter value.
Error 248: A counter must be assigned to this threshold alert	A counter must be assigned to an alert before it is enabled.	Use the `perf.counterThreshAlerts.setCounter` command to set a counter before the alert is enabled.
Error 249: At least one port or port type must be added to this threshold alert	A port or port type must be assigned to an alert before it is enabled.	Use the `perf.counterThreshAlerts.addPort` command to add a port before the alert is enabled.
Error 250: Invalid counter threshold alert name.	The name specified for the alert is not valid.	A counter threshold alert with the specified name does not exist.

Table 5: CLI Error Messages (Continued)

Message	Description	Action
Error 251: The threshold alert must be disabled	The counter threshold alert to be modified/deleted is already enabled.	Disable the threshold alert and then try the command again.
Error 252: Not Allowed While the Pending Fabric Binding State is Set to Inactive	The pending fabric binding set must be set to `Restrict` in order to edit the pending Fabric Binding List.	Set the pending fabric binding state to `Restrict`.
Error 253: Cannot Remove a Member Currently Interacting with the Fabric	Current members of the fabric must be included in the Fabric Binding List.	Do not remove active fabric members from the pending Fabric Binding List.

index

A

audience 10
authorized reseller, HP 15

B

back pressure state, Open Trunking 151

C

case sensitivity, CLI commands 19
CLI commands
  case sensitivity 19
  commaDelim 31
  command tree 20
  config.features.enterpriseFabMode 40
  config.features.enterpriseFabMode.setState 39
  config.features.ficonms 41
  config.features.installKey 42
  config.features.OpenSysMS 43, 44
  config.features.show 45
  config.ficonms.setState 47
  config.ip.ethernet 48
  config.ip.show 49
  config.openSysMS.setState 50
  config.port.blocked 51
  config.port.extDist 52
  config.port.fan 53
  config.port.name 54
  config.port.show 55
  config.port.speed 57
  config.port.type 59
  config.security.fabricBinding 61
  config.security.portBinding 71
  config.security.portBinding.bound 72, 78
  config.security.portBinding.show 76
  config.security.portBinding.wwn 74, 80
  config.security.switchBinding 78
  config.security.userRights 84
  config.security.userRights.administrator 85
  config.security.userRights.operator 86
  config.security.userRights.show 87
  config.snmp.addCommunity 88
  config.snmp.authTraps 89
  config.snmp.show 91
  config.switch.bbCredit 94
  config.switch.domainRSCN 95
  config.switch.edTOV 97
  config.switch.insistDomainId 96
  config.switch.interopMode 98
  config.switch.prefDomainId 99
  config.switch.priority 100
  config.switch.raTOV 102
  config.switch.rerouteDelay 103
  config.switch.show 106
  config.switch.zoningRSCN 108
  config.system.contact 109
  config.system.date 110
  config.system.description 111
  config.system.location 112
  config.system.name 113
  config.system.show 114
  config.zoning.activateZoneSet 117
  config.zoning.addPortMem 125
  config.zoning.addWwnMem 124
  config.zoning.addZone 121

config.zoning.clearZone 127
config.zoning.clearZoneSet 120
config.zoning.deactivateZoneSet 118
config.zoning.deletePortMem 129
config.zoning.deleteWwnMem 128
config.zoning.deleteZone 122
config.zoning.renameZone 130
config.zoning.renameZoneSet 123
config.zoning.replaceZoneSet 119
config.zoning.setDefZoneState 116
config.zoning.showActive 132
config.zoning.showPending 131
handling errors 32
logging in or out 28
login 29
logout 30
maint.port.beacon 134
maint.port.reset 135
maint.system.beacon 136
maint.system.clearSysError 137
maint.system.ipi 138
maint.system.resetConfig 139
maint.system.setOnlineState 140
output 27
overview 37
parameters 27
perf.class2 142
perf.class3 144
perf.clearStats 146
perf.errors 147
perf.link 149
perf.openTrunking.backPressure 151
perf.openTrunking.congestionThresh 152
perf.openTrunking.creditStarvThresh 153
perf.openTrunking.setState 154
perf.openTrunking.show 155
perf.openTrunking.unresCongestion 157, 158
perf.thresholdAlerts.counter.addAlert 161, 162
perf.thresholdAlerts.counter.deleteAlert 164
perf.thresholdAlerts.counter.removePort 165
perf.traffic 172
show.eventLog 175
show.features 177
show.frus 179
show.ip.ethernet 181
show.login.server 182
show.nameServer 184
show.nameServerExt 186
show.openTrunking.config 188, 190
show.port.config 192
show.port.info 194
show.port.nodes 196
show.port.status 198
show.port.technology 202
show.security.fabricBinding 204
show.security.portBinding 205
show.security.switchBinding 207
show.switch 208
show.system 211
show.thresholdAlerts.alert 213
show.thresholdAlerts.log 215
show.zoning 217
command line interface
command overview 37
command tree 20
handling errors 32
help 33
logging in or out 28
output 27
overview 18
parameters 27
purpose 18
Telnet session 35
user access rights 28
command tree 20
movement limitations 26
navigation 25
commands
config 38
config.maint 133
config.perf 141
config.show 174

config.switch 93
config.zoning 115
config commands 38
config.maint commands 133
config.perf commands 141
config.show commands 174
config.switch commands 93
config.zoning commands 115
configuration
OpenTrunking 188
congestion
unresolved 157
congestion threshold
OpenTrunking 152
conventions
document 11
documentation 19
equipment symbols 12
navigation 19
text symbols 11
counter threshold alerts 158
credit starvation threshold, OpenTrunking 153
CTA 158

D

document
conventions 11
related documentation 10
documentation conventions 19

E

entering CLI commands 19
Enterprise Fabric Mode
activating 39
deactivating 39
equipment symbols 12
error messages 219

F

Fabric Binding
active configuration
show 69
pending configuration
activate 62
replace 66
show 70
fabric binding
membership list 63, 64, 65
state 67
fabric membership list
add 63
clear 64
delete 65
feature
Enterprise Fabric Mode
activate 39
deactivate 39
FICON Management Server 47
Open Systems Management Server 50
OpenTrunking 44, 154
SANtegrity 39
FICON Management Server 47
FICON Management Style 41
ficonms 47

G

getting help 14

H

help 33
help, obtaining 14
HP
authorized reseller 15
storage website 14
technical support 14

L

link sequence counts 160
log
  threshold alert 215
logging in 28
logging out 28
logical link errors 160

M

Management Style 41
membership list
  fabric 63, 64, 65

N

navigation conventions 19
null strings 27

O

Open Systems Management Server 50
OpenTrunking
  back pressure state 151
  congestion threshold 152
  credit starvation threshold 153
  show 155
    configuration 188
    reroutelog 190
  state 154
  unresolved congestion 157
OpenTrunking state 44
OSMS state 50

P

performance alerts 158
physical link errors 159
port
  threshold alert 162

R

rack stability, warning 13
related documentation 10
reroutelog, OpenTrunking 190
RSCN
  zoning state 108

S

SANtegrity
  Enterprise Fabric Mode 39
  Enterprise Fabric mode 40
show
  OpenTrunking
    configuration 188
    reroutelog 190
  OpenTrunking information 155
state
  back pressure 151
  OpenTrunking 44, 154
  zoning RSCN 108
statistic table, threshold alert 170
summed sets 159
Switch Binding
  add new member 79
  delete member 80
  set state 81
  show configuration 83
Switch Member List
  add member 79
  delete member 80
  show 83
symbols in text 11

T

technical support, HP 14
Telnet client session 35
text symbols 11
threshold alert
  activate 171
  add alert 161
  alert list 213
  counter
    setting 166
  deactivate 171
  delete alert 164
  disable 171
  enable 171
  list 213
  log 215
  name 169
  parameters 167
  port
    add 162
  statistic table, show 170
threshold alerts
  overview 158
  summed sets 159
throughput threshold alerts 158
trunking
  congestion 152, 157
TTAs 158

U

unresolved congestion
  OpenTrunking 157
user access rights 28

W

warning
  rack stability 13
  symbols on equipment 12
websites
  HP storage 14

Z

zoning
  RSCN state 108